The Builder.

No. CCV.

SATURDAY, JANUARY 9, 1846.

ALTHOUGH two years have elapsed since the Metropolitan Buildings Act came into operation, doubts as to the precise meaning of many of its provisions still exist. In some, the district-surveyors are not agreed even amongst themselves, but act differently in similar cases; and considerable unpleasantness is the unavoidable result. The means given by the Act to resolve these doubts and prevent this diversity of practice, namely, an appeal to the official referees, will of course gradually have that effect; but unless the district-surveyors and the public will look to the awards made by the referees, and conform their opinions and mould their course in similar cases accordingly, irritation will still be kept up, and certainty never be arrived at.

At the Buildings Office it is possible a different opinion may prevail. It may be considered there, that every case ought to be decided on its own merits, and that the surveyor ought not to be guided or influenced by any previous award, however fully it may seem to bear on the case before him. We do not know that this is so: we should suppose otherwise indeed, if it were not for statements made by some of the district surveyors. But if it be so, we must respectfully dissent from it. There will necessarily be cases of difference arising, on which appeal must be made; but these ought to become fewer every day, to which end it is of the greatest consequence that district surveyors should make themselves acquainted with all the awards, and read the Act with these before them.

We are not to be understood as arguing for implicit adoption, without question, of all the decisions arrived at by the referees. They are able and conscientious men, and doubtless give full consideration to every question submitted to them, and decide it according to their best judgment. But all men are fallible, and the referees are men. Still the awards open to sound objection are exceptions,—we are speaking of a general rule.

Amongst the doubts (it ought to be a doubt no longer), is one concerning flues which has been submitted to us several times, in one case a twelvemonth ago, and now as lately as the present week.

The question is stated thus by an operative builder:—

"Sir,—I should feel much obliged if you would give us some information on the following point, namely,—whether an opening can be made in a flue to admit of the insertion or the connection of a wash-house flue?

In fact, whether any coppers are to be used at all, except by those persons who already possess them. For if the making of a distinct chimney for a copper be insisted on, it will in fact, entirely prohibit the setting of coppers. Surely this cannot be the intention of the Buildings Act; as it expressly allows the cutting of flues for the insertion of stove-pipes.

The case in which this question has been particularly raised is this:—I have a contract to set fifty or more coppers in three new streets in the Greenwich district, comprising sixty fourth-rate houses, belonging principally to working men. In most of the houses, an opening has been left for the purpose of inserting the copper flue; but in some of them the opening has not been left, and in several others has been left on the wrong side for the copper.

The district surveyor's assistant tells me that where the opening has not been left, no copper shall be fixed unless I carry a distinct chimney up through the roof, which as a matter of course, will not and hardly can be done even at a great expense.

I am bound by my contract to fix the coppers on a York stone 2½-inches thick on solid earth, and to do the same in a sound, workmanlike manner. You will greatly oblige me and many others by stating your views on this subject, as it is a most important question to the working classes especially. If insisted on, it will almost prevent the use of an indispensable article to cleanliness, and therefore health.

The houses are not yet finished or inhabited, and the fees have been paid."

In reply to previous inquiries to the same effect, we expressed our decided opinion that nothing in the Act was intended to prevent such a connection being made. The clause supposed to prohibit it, headed "*Cuttings into Chimneys*" (schedule F), says:—

"And as to every chimney-shaft, jamb, breast, or flue, already built, or which shall be hereafter built, in reference to cutting the same, no such erection shall be cut into for any other purpose than the repair thereof, or for the formation of soot doors, or *for letting in, removing, or altering stove pipes* or smoke jacks, except as directed for building an external wall against an old sound party-wall."

And we pointed out that it was simply necessary to make the connection by means of a small piece of pipe, to overcome the objection which, through a verbal omission, might be raised, though only by one who was willing to create a difficulty.

We are glad to be able to confirm this opinion by an award dated the 21st of last month, and which will, we hope, set the question at rest.

In the case of building a new angle chimney in a bath room, on the ground or entrance floor of 35, Hill-street, in the district of St. George, Hanover-square, the flue from which is taken, by a short pipe wholly inclosed with brickwork, into the flue of the kitchen chimney, the district surveyor contended, "that it must have a separate and distinct flue, and that it is contrary to the Act for two fire-places to be connected with the same flue, and that such cutting into the flue, to form the connection, is prohibited by the clause in schedule F, "cuttings into chimneys." The owner's surveyor, on the other hand, contended, that such clause admitted of what had been done, as the cutting away for letting in stove pipes is clearly laid down, and that in no part of the Act is the carrying the smoke from two fire-places into one flue prohibited.

The referees awarded:—"That inasmuch as it is not provided in the said Act that every chimney must have a 'separate and distinct flue,' if the flue in question be properly inclosed with brickwork, at least four inches thick, or if being a smoke-pipe, and not so inclosed, it be placed at the required distance from any timber or other combustible materials, the same will not be contrary to the said Act."

The last circular from the registrar, relative to projections from walls of buildings over public ways,* gives a less objectionable view of the question than the first, but, nevertheless, still puts a construction on Schedule E certain to produce an injurious effect on street architecture, and which, moreover, we venture to think it was not intended to bear.

The modification of their first opinion must be regarded as an admission that they saw the mischief that would be caused by the rule, if carried out as was at first thought necessary; for in truth, the ground for the modification is absolutely *nil*. If Schedule F declares that no decorative projections,—win low dressings, cornices, or shop-fronts,—from the wall of a house erected since the new Act came into operation, shall be permitted to overhang a public way, it also unquestionably extends to buildings erected *before* that event upon their being rebuilt. We will not, however, find fault with this; but we call upon the referees to go still farther, and revoke their first instructions altogether, although they may feel able to prove them correct.

We have attentively considered the whole of the schedule again and again, and are more perfectly than ever satisfied, that the constructors of the Act never intended that the owner of a house abutting on the public way should give up a portion of his ground (without any advantage to the public, too), or forego all attempt at architectural decoration. There is an evident distinction made between decorative projections and those which form essential parts of a building, as was pointed out in the able letter on the subject, by T. L., in our last volume;* notwithstanding this distinction is not recognized in the clause which sets forth, that no projections shall overhang the ground of another owner.

"Though we are accustomed to strange anomalies in Acts of Parliament," says T. L., "yet in this case one can scarcely suppose that the legislature had enacted that a thing might be legally done by one clause, and that it could not be done by almost a successive clause. There would surely have been some exception or proviso made in the first, to meet the contingency in the second; but there is, however, none. The Act expressly enacts that cornices may project beyond the line of houses, a case that occurs most frequently in the city, but the official referees say no; the subsequent clause nullifies the first.

It appears to me that there is an ambiguity in the word projections, which I submit is used in three different senses in the three clauses; in the *first*, it is applied to architectural decorations, which are allowed; in the *second*, to projections which do not form a portion of the building, such as balconies, verandahs, &c., and which are also allowed, with a proviso; and in the *third*, to projections which do form essential parts in a building, such as projections on plan (a wing and centre for instance), or projections in elevation, such as bay windows or corbelled rooms. These are prohibited unless the house is set back."

In respect of shop-fronts, an amount of projection is stipulated for, to be the same "*whether there be an area or not*,"—in other words, as we take it, whether it be over the owner's own ground or *not*.

If the rule be insisted on even in respect of new buildings, the result will be the entire abandonment of all architectural decoration. Houses set back to admit of window dressings or cornice would of course lose, in appearance of extent, the thickness of the two half party-walls,—a sufficient reason of itself to prevent the majority of owners from adopting that course.

We have stated our opinion that the referees are not bound to insist on this rule. Let that opinion go for what it may be worth. But if the referees still think otherwise, we trust they will forthwith endeavour to obtain such a modification of the Act in this respect, as may be considered necessary.

COMPETITION.—Designs have been called for, by advertisement, for a tower of medieval character, to be erected near St. Peter's Port, Guernsey.—A premium will be given for the approved design.

---

* Vol. IV., p. 617.

* See Vol. IV., p. 555.

CONTEMPORARY ARCHITECTURAL CRITICISM.

It has become an established opinion with writers of the day, that there is but one field which the human intellect leaves uncultivated. That this *dictum* has been applied to architecture, not without reason, we are not quite prepared to deny, but rather to assert, as we have already done, that the present state of architecture is a reproach to the age, and matter for deep regret to its professors. But when it is also put forth as an axiom, in the common criticism of newspapers, that architecture has no reproductive power,—that here is an art which will admit of no alteration, much less improvement, to which the ordinary revivifying influence of new matter is denied,—then we deem it necessary, however little so extreme an opinion may have taken hold of those who have really studied the art and the history of architecture, to protest against the frequent publication of erroneous views, with the sanction which the world at large will generally allow to what is confidently stated in print.—Probably, in no profession are the merits of a production more freely canvassed than in that of architecture; whilst seldom can we find professors so indifferent to the expression of their opinions in the form of publication. Were architectural criticism, generally, in the hands of architects, such writers would estimate conflicting views, and consider the merits of a work ere they would condemn it; with the pen, they would pause to examine what the ready tongue is too prone to say, often with little consideration for propriety of phrase. Instead of a mere repetition of crude or exploded notions, gleaned by the gentlemen who "do the fine arts," from encyclopædias and periodicals, real principles would be ascertained, and enunciated, and the people would have laid before them correct views in art, for those now substituted. Popular opinions upon architecture seem to us matter for the serious attention of architects; influencing, as they do, through the channels we have alluded to, the opinions of the educated, and often supplanting the result of mature reflection in the minds of architects themselves.

A careful examination into the actual state of architecture, considered as a reproductive art, compared with those other arts and sciences which occupy the attention of the world, would, we think, show,—first, a too highly rated estimate of the present exercise of invention in general, and, secondly, a misconception of the position of architecture in the present day, as compared with its state at former epochs. Now we might succeed in proving, that invention, strictly speaking, has never had any existence since the time of the creation. The most happy efforts of ingenuity, called inventions, have never been any thing more than the re-arrangement of matter, or knowledge, previously existing; and discoveries in nature and science, which are not originative, are merely existing facts, made patent, through a careful balance of accompanying circumstances and causes.—It will be recollected, that we are only contending against popular fallacies; there may be some who know better.

But, by those who most of all lament the present state of architecture, a position is expected for it, in which *it* has never been placed, and which has never attached to any science, or to any other branch of art. By these writers it is assumed that architecture—which, let it also be recollected, deals with forms which can strongly impress themselves upon the recollection—should in all its works employ outlines and details, which had not before been met with—forgetting that such would be an exercise of invention, to which humanity is not equal.

By some of these critics it is supposed that the whole matter of architectural design is fully expressed in previously existing styles, and that the merits of any composition under notice, are to be estimated solely by its likeness to the architecture of a former period; whilst the stereotyped phrases of "slavish adherence to precedent," "want of originality," and the like, are used by others, who are unable to judge of the propriety of such condemnation. Were these writers architects, or had they examined the past history of art, they would know, that not architecture only, but every other department of art, has had slow progress; that in changes of style, and in what passes for originality of design, little, comparatively, is due to individuals; and that, in any particular era, had only one inventive mind been exercised, future ages would have found it hard to separate the modifications introduced, from the general style of the date. It is true that architects, and other professors of art, are often able, as in the architecture of Italy during "the revival," to distinguish the style of each master, and to ascribe, where due, the authorship of an invention. But the very circumstance, that the world in general is unable to do this, shews that the stages by which alterations in design are made, are too minute to constitute what the vulgar deem originality, and freedom from the "shackles of precedent." It does not follow because, for example, the capital and order from the Temple of Jupiter Stator are used in a modern building, that the whole design is not as creditable to its architect, and as fine in conception as any building by Palladio, or Vignola, or by an architect of any other period equally lamented as superior to this. In truth, the painter and the sculptor, as well as the architect, if they would produce works which may really be creditable to themselves and to the age, must draw largely for materials and ideas upon the works of predecessors, and because they do this, it does not follow that they render themselves less worthy of the admiration of their contemporaries, or less entitled to their place in the Walhalla of artistic fame. There may be many who repeat, rather than re-combine, and in whose works it is impossible to find the expression of an idea, the origin of which is not at once discernable; but it is our complaint, that ordinary critics do not separate these from the really intellectual and refined, and deny therefore the reproductive power of architecture, or suggest impossible theories for its renovation. What may be called originality in design has really the claim, only because the source of the idea is not, or at least not readily, apparent; for it is the ingenuity in seeking out unexamined and secret sources of ideas, rather than the originating of the ideas themselves, which makes the true artist.

We believe, that amongst the world, it is much easier to recollect the general character of a building, or the design of a capital, or other detail, than the treatment of the composition in a painting or a statue. Consequently the debt which is due to precedent in two of the arts, escapes the eye, whilst it is apparent in architecture; and as those who ordinarily write upon art, know little of its history and principles, it is assumed that architecture is in a position to which it has never before fallen, which is unparalleled in any other branch, and from which it can never recover. Now, indeed, we find, the more we examine into the past history as compared with the present state of art, that there is not quite that reason to doubt the occurrence of a future brilliant era, which many writers would have us suppose. We look back to the age of Grecian art, and find the style then proceeding by stages, scarcely discoverable by the eye, even of an artist; in the early Roman period, and in the Revival, we find a respect for "precedent" which may not unfairly be compared to that, for which we are said to be remarkable; and during the same age of "the revival" we find the Italian and the Gothic styles co-existent, and even practised by the same architects, which is the chief stigma upon architecture now. Even in Gothic architecture, we doubt whether the changes of style appeared as great and important whilst in progress, as they do to us, or whether posterity will not see in our efforts something of general progress, which they will be able to comprehend and classify, somewhat as we are able to do similar periods of co-existant styles, which the history of art, if at all minutely examined, discloses.—That the monuments of art of all ages and styles, can be made to minister to invention and good architecture, we should not find it necessary to state, were not the contrary asserted, in effect, in the writings of critics of the order we have referred to. Such writers, in their hostility to copyism, would deny us even the legitimate and proper use of ancient models, forgetting that even "precedent" may have its value, and, further, afford that which one mind alone could not by nature supply.

There is yet one circumstance in the present state of architecture, which is not wholly without cause for congratulation, and yet may have some immediate effects. It cannot be denied, that the very advantages which architecture has, through the accurate manner in which it is illustrated, are not applied in the way most conducive to excellence in style. But, were it asserted, that in this there could be any thing opposed to the interests of the art, it would in effect be to deny the value of ancient models, which, it is our object to urge, contain the chief matter out of which future excellence in style must be created. Architecture has within it a reproductive power, which can parallel the style of any age; but that power is impeded, whilst the ordinary channels of criticism are made to disseminate views, not founded upon a deep insight into a subject of much difficulty, one which can only be grappled with by those who are perfectly familiar with every branch of the inquiry.

MURAL DECORATIONS: ST. GERMAIN L'AUXERROIS, PARIS.

For four years M. Mottez, a French artist, has been engaged in the decoration of the porch of St. Germain l'Auxerrois, an addition to the main building attributed to the middle of the fifteenth century. He has now finished his work, and produced a series of pictures in fresco, illustrative of the establishment of the Christian religion, conceived in the Gothic spirit, and made to accord in character with the church.

The principal picture is in the tympanum of the great doorway, and represents the Saviour on the cross, supported on the knees of the Father, who sits behind the head of it. Around, at his feet, are clustered the persons who have thrown lustre on the church of France,—all saints but one, and that is Joan of Arc! On the right and left of this are two long upright pictures, with pointed heads, filled with super-posed groups. One, Christ preaching on the mountain, with groups of figures below, illustrating certain commandments; and the other our Saviour on the Mount of Olives, with the Virgin Mary, surrounded by a group of women, at the foot.

Some of the French journals object to the external decoration of a Gothic building with painting; and, secondly, to a return to a style of art long since abrogated.

One of these, *L'Illustration*, offers many objections to such works, and to that now under consideration in particular. "If we candidly examine," says that journal, "this specimen of monumental ornament, the return to polychromatic architecture which has been attempted in the porch of the church of St. Germain l'Auxerrois, leaving out of consideration the work of the painter, of which we will not yet speak, we must frankly own our opinion, that these works which have received so much praise, are neither correct, useful, nor agreeable. Are they legitimate—do they belong to the art of the middle age? is a question that qualified archæologists must decide. They found, under the white-wash, traces of painting at the cathedral of Saint Denis, also at the Sainte-Chapelle of Paris, upon a bas-relief on the outside wall of the choir of Notre Dame, in the cathedrals of Rheims, Chartres, Soissons, &c., but these remains of painting are mostly seen in the interior, and we should, perhaps, commend a zeal which has there restored these works to general favour. There these fanciful ornaments, of a thousand colours, blend well with the play of light produced by the stained glass; and their rich details form in the chapels a natural transition to the rich decorations of the altars." But outside, continues the writer, it is another matter, and he gives reasons for objecting to it. "No architect of taste," he goes on to say, "would think of making a vestibule as costly as a reception-room; and then what place have they chosen for this architectural miniature? We would accept it in some dark place away from the city. But here, in front of the largest and the most beautiful monument in Paris,—in front of the noble architecture of the colonnade of the Louvre, the folly of the toy is made more apparent by contrast. Moreover, is it a wise thing that these works should be under an open portico, open in every direction to the west wind, that is to say, to the rainy quarter which rules in our Parisian climate three parts of the year. When one sees the damps which, in the interior of the church, have greatly spoilt

the paintings recently completed, one must fear that the exterior dampness will cause a more rapid destruction."

The frescoes themselves, the writer thinks, have undoubted merit; they agree with the structure which contains them.

Executed in a plain tone, they harmonise well together, with the exception of some blues, which are rather too bright. In such a work the artist has hardly fair play:—"He was not free to inscribe on those walls his independent fancy;—a figure graceful and young, by the side of a form stiff and gothic; a conception of our time by the side of the traditions of the middle age. He has also sacrificed in his works form to symbolism: and this sacrifice has been in some parts carried very far, as in the tympanum, representing Christ on the cross. The Eternal Father holding between his knees, and sustaining with his extended arms the instrument of punishment, forms, with the body of the victim, an ugly and ungraceful whole. Further, if the Holy Spirit, the Father and the Son, are here only as symbols, it is perhaps wrong to have given to the two angels, at the right and left of the Eternal, too animated gestures of human affliction. The skies of gold, on which are cut the lines of the horizon; the discs of gold, on which the heads are inlaid; the want of ethereal perspective; the sacrifice of geometrical perspective; all in this great composition shew the shackles of conventional art. And is it not a hard necessity that condemns the artist to suppress inspiration, to sadden form and colour, to stifle life and sentiment, for the gain of a useless concordance with an old form, once a lively work of the faith, now a dead letter, and not understood by the crowd? Nevertheless, whatever we may say of the system, let us do justice to the persevering courage, the long and difficult researches, of the artist, who, during four seasons, has devoted himself to this great work, has lived as a man of the middle ages, and has brought to completion, with a great character of unity, this immense monumental decoration."

VICTORIA PARK AND THE "WOODS AND FORESTS."

SIR JOHN CASS'S CHARITY LANDS.

CORRESPONDENTS have drawn our attention to the eastern Park, complaining of the tardy pace at which the Commissioners of Woods and Forests have proceeded in all the arrangements relating to this improvement. The Act for its formation was obtained some years ago, and it is only *now* partially laid out and planted. The respectable community on the eastern side of the metropolis have really ground for complaint in this hope long deferred. *When* completed, it is said, that, in some respects, it will outvie Regent's or Hyde Park. A lake, six acres in area, with a fountain to throw fifty feet high, is promised; and the size and costliness of the lodge and bridge (near where old Bonner's Hall stood) bears out the assertion. The lodge, designed by Mr. Pennythorne, may be called Elizabethan in character, and is built of red brick with stone dressings. It is lofty, and has a tower, the lower part of which is open on three sides to form a porch. At the time of the formation of this park, there was much discussion as to the site. The landowners of Stepney, Limehouse, and its vicinity, urged on the Commissioners that the south side of the Mile-end-road would form a more desirable position for a public park; but it seems clear that the site chosen was really better for the public weal,—the districts of Bow, Stratford, Hackney, Dalston, Clapton, Kingsland, and Stoke Newington, will all, more or less, derive benefit, when the park is finished and the approaches made; and the projected line of road from Limehouse will open a suitable avenue from that quarter. The Commissioners of Woods have given notice of application to Parliament in the ensuing session, with reference to this approach, and also for powers to form an approach from Cambridge-heath gate, and another from Bethnal-green-road. Surely, this was a *faux pas* on the part of the authorities to omit provision for the approaches till now; another two or three years will be absorbed, which might have been saved if the approaches had at least been formed simultaneously with the park. Where is Victoria Park? is not at all an unfrequent question, even within a hundred yards of the gate, so obscured and hidden is it in its position; the block of houses on the eastern side of Bethnal-green-road, and thence northward to Cambridge-heath, form a perfect *curtain* to the park from the London side. It might seem hypercritical to carry these remarks further, but really it is too true; at the present moment, there is not one direct and accessible road by which a visitor could drive to the park. No person standing at the Cambridge-heath gate could imagine that he was within two minutes' walk of the park, and might see the lodge if he knew where to look for it. Surely, as a mere piece of worldly policy, this is unwise.

The land in Victoria-park will *not let* for building purposes until the public know and can see the way to it. It was the natural hope of all who were interested in the improvement of the eastern side of the metropolis, that the park would excite to a better class of buildings than had been formerly erected. In this respect some few have honourably emulated, and have gone forward with energy to the work. There is an important charity estate, known as Sir John Cass's Charity, lying north of the park, and forming the entire northern boundary; and the trustees of this property seem resolved to do their part for the improvement of the neighbourhood. They have swept away a wretched village of houses (or hovels, more properly), formerly known as Botany Bay; and this peculiar cognomen arose out of the circumstance of so many of its inhabitants being sent to the *real place*, not for their good deeds, it may well be believed.*

The estate of Sir J. Cass's Charity bids fair to become a most important one in this district; and when the contemplated approach is made from Cambridge-heath to Gun-street, and the other roads in course of formation are carried out, it cannot fail to become popular as building property: new roads and sewers are being formed. The Governors of St. Thomas's Hospital have also an estate at the north-west corner of the park; but they do not seem yet to be in the field for building purposes. It is satisfactory to find, that large owners of property are making a resolute effort to improve the eastern side of the metropolis. There is much to be done in the neighbourhood of Hackney, as any one who has had occasion to travel in a vehicle, in any direction but the one main line to London (and that is any thing but a direct one) will verify.

If those who are interested would unite and obtain a local Act, they might at comparatively small cost improve their own property and benefit the public greatly. An immense number of small houses have been built in Hackney and Homerton within a few years, and unless some general plan for improvement be determined on quickly, it may be too late. In the neighbourhood of the park an enormous church (St. John of Jerusalem) is being erected, under Mr. Hakewill, which promises well. It is a cross church, early English in style, and has a most capacious chancel. The roofs are now being put on.

* Sir John Cass was a worthy alderman of London, who died in 1718. His father, Thomas Cass, was carpenter to the Royal Ordnance, and acquired a large fortune, which descended to Sir John. The latter built two schools near the church of St. Botolph, Aldgate (opened 1710), besides some other buildings contiguous to these; and provided salaries for the master and mistress. He willed, that after the death of his wife the whole of his estate should be held by certain trustees, to provide the charity-children of his schools with a dinner every day, and for other purposes; but died with the pen in his hand without fully completing the instrument; which led to much litigation and difficulty, not settled till thirty years after Cass's death. The estate is managed by twenty-one trustees. Sir James Flower is the treasurer. It is proposed to build schools at Hackney in a short time.

THE NEW HOUSES OF PARLIAMENT,

AND THE PROGRESSIVE RISE OF THE RIVER.

I have noticed, for nearly half a century, the gradual and regular rise of the waters of the river Thames. My attention was first drawn to it by finding that extreme high tides were not preceded, nor succeeded by, similar tides.

These were recorded by the watermen of the Westminster Horseferry, by notches cut by them on a post there, ere the post was removed when the street was raised.

This subject led me to conjecture as to the origin of the Marsh Walls.

I now observe, that professional men in reporting on some localities, such as Westminster, say that the sewers there were originally too low. But it appears from what I shall relate, that the said sewers were high enough when they were first made; but are not so now, owing to the rise of the river.

It appears that I am the first person who has noticed a circumstance so universally continuously evident. The architects of modern, as well as ancient buildings, were not aware of it, as will be too plainly seen by referring to the floor of Westminster Hall, the upper line of the starlings of old London-bridge, the gate of Lambeth Palace, the York Water-gate, Adelphi, the level of the wharfs there, &c.

A paper by me, going more fully into the subject, was printed in the *Morning Herald* of April 4th, 1843.

In 1844, the Commissioners for improving the metropolis published their first report, comprising the evidence as to the proposed embankment of the Thames, by Mr. Walker, Mr. Page, Mr. Cubitt, and other scientific men, *up to August*, 1843, with numerous plans, sections, &c. of the river.

Not one of these gentlemen alluded to the rise of the river; but, on the contrary, they all refer to a *fixed standard level of high water, called Trinity datum* (made, it appears, in 1800). And in referring to the Marsh Walls, they attribute the formation of them to the Romans, *vide* pages 66, 212, 230.

My theory has hitherto been met at every step by contradiction, although it is supported by the science of physical geography, combined with geology.

It appears that the ground line or plinth of the palatial Houses of Parliament is already below the level of extreme high tides. The difference of the rise of the highest tide before the Parliament Houses were burnt down, to the last highest tide, viz. in December, 1845, is but ten inches. The preceding highest tide was in October, 1841. These two tides were very carefully noticed at the "Fox under the Hill," Adelphi, the people there being up at the late hours both these tides occurred at; the difference was exactly one inch; the lines of elevation are painted in the tap-room there.

The gate-towers of Lambeth Palace were built by Cardinal Morton, about 1490. It is evident, by the height of the door-way there, that the ground was elevated two feet, when the hall was rebuilt at the restoration; the last highest tide was 18 inches above the line of the said present raised ground or road.

There is a house in Upper Fore-street, Lambeth, with large chesnut beams and uprights; this appears of about the time of King Edward the First; the first floor is now only 3 feet 1 inch above the street, which is close to the river; therefore, when this house was built, the lowest marsh, viz. that opposite to Greenwich, was above the level of the highest tide, and might then be entitled to its name of "The *Isle* of Dogs."

The said ancient house in Fore-street is now in a most neglected and decayed state. There is a tradition there that it was part of a bishop's house, and had steps in front, with trees before it. I cannot find any account of it in topographical works, but Mr. Green, the proprietor, says it adjoined the remains of a larger building of similar materials.

The River Locks.—In 1803 there was no lock between London and Windsor. The locks since made must in a slight degree increase the height of some tides at London.

The Old London-bridge was taken down before the commencement of the palatial Houses of Parliament. The removal of the old bridge has very much altered the *ebbs*, but can only to a slight degree affect the height of the flood tides, because there was no fall when the tide was running up, but only a strong current. The fall was greatest about half an hour before low water (above the bridge), when it has been as much as five or six feet, —then keeping the water above the bridge, at that time of so much superior elevation—of course, the higher portion of water kept running down, until the water below bridge rose to a common level.

T. HIGGS.

FALL OF A WALL.—A wall 10 feet high, at Blackwall Point, was thrown down last week, by piling sand against it, and a person who was passing at the moment was killed.

RAILWAYS IN THE PAPAL STATES.

In a notification lately issued by Cardinal Gizzi, secretary of state, the Pope authorizes the execution of the lines of railway undermentioned:—1. That from Rome through the *Valle del Sacco*, to the Neapolitan confine near Ceprano. 2. That joining Rome with the port of Anzio. 3. One from Rome to Civita Vecchia. 4. That from Rome to Bologna, by way of Ancona, which passes through the most populous parts of Umbria, as Foligno and the valley of the river Potenza, and follows in part the traces of the Via Flaminia Emilia. —The conditions on which these lines shall be assigned to the companies, represented by pontifical subjects, after approval, are, the presentation of:—1st. The description of the lines contemplated. 2. "Artistic and economic information" which they may be able to give in regard to these lines. 3. The statement of the time in which they propose to complete the studies, and the works, if approved of, and of the time for which of the concession they demand the enjoyment the works. 4. The security they propose to give in favour of the proprietors of the lands, and the security to the Government, before the works are undertaken, that they shall be completed. 5th. The exposition of the means by which they propose to conduct the undertaking. The interests of the pontifical subjects being considered, both as regards capital and work.—Three months are granted for presenting the projects, with these conditions, which time may be extended on proper representation.—The Government also notifies that the construction of these lines being secured, it will take into consideration the line from Foligno to Perugia, and Citta di Castello, through the *Valle del Tevere*, and others, whose utility may be perceived; and it further offers a gold medal of the value of 1,000 scudi, to whomsoever may indicate the best mode of passage between Umbria and the *Marche*.—This resolution of the Papal Government, holding out, as it does, the prospect of many other "judicial reforms, and economic ameliorations," in the words of the notification—will have a most important and invigorating influence upon the prosperity of the Roman states, and the effects of the enlightened policy of the present Pope will reach, through the still active agency of the Roman Catholic Church, far beyond the mere confines of Italy. —We trust, that a hint, given in the programme of conditions, may warrant us in assuming that some arrangements will be made for the careful preservation of all works of art which the works will approach, or which may be discovered during their execution.—The *Roman Advertiser*, the English newspaper published in Rome, still continues to give much interesting information to residents, and those who have visited "the eternal city," and may, we perceive, now be seen in London.

RAILWAY JOTTINGS.

The invention of a railway speed-register, or regulator, has been already cursorily noticed in *The Builder*, but no account of its mechanism has appeared till now that it has been called for and constructed for use on the East-Indian Railway, for the guidance of the servants, chiefly native, on that line; a circumstance likely to lead to its general adoption at home as well as abroad, as it provides for a want continually experienced, and hitherto inadequately supplied by tabular forms. It consists of a dial of about five feet in diameter, upon the upper half of which is a series of numbers, showing the distances of each station along the line, the number of hours occupied by every train in both directions between each station, and the several stations and stopping-places between the extreme termini. In the centre is a clock dial, by which the departure and arrival of every description of train can be ascertained at a glance. The several trains are indicated by elongated hands, which are worked by a movement constructed according to the speeds required, and attached to the works of the clock. In the railway regulator the goods' train travels at the rate of 12½, the passenger train at 25, and the express train at 50 miles an hour. The trunk line movements are all indicated upon the outer circle; and the branches dial, nearer the centre, by which means additional branches can at any time be introduced, and put in motion when required, without inconvenience, expense, or derangement of the original machine.——The saving of expense in the transit, by railway, of the yearly supply of 150,000 head of cattle, and 1,500,000 sheep, to the metropolitan market, is estimated at no less than 675,000*l.*; and considering that the trouble and expense of conveying live cattle and sheep are much greater than those of the mere dead-weight, from which, moreover, a heavy surplus of waste, garbage, &c., would be further deducted; the saving might be greatly increased by the transmission of the so far ready-prepared article instead of the live, as well as raw, material, with all its intolerable annoyances, both metropolitan and provincial.——The rate-payers and residents of Regent's-park and its vicinity have memorialized the Marylebone vestry against the Regent's Canal Railway scheme, as likely to deteriorate the property and destroy the retirement of the neighbourhood, as well as to stop the equestrian, and take away the security of the pedestrian, exercise in the park.——A brisk trade in coals, to be unshipped at Blackwall in order to avoid the heavy London port dues, and transmitted along the Blackwall and Stratford lines to Stamford, Cambridge, &c., is anticipated since the announcement of the Eastern Counties Company's intention to carry coals along their line. From Lynn, too, by way of Ely, an additional supply is looked for. Yorkshire coals are thus expected to be had at Cambridge for 17s. to 18s. a ton, and even Newcastle for 21s. to 22s,—less, in fact, than in the metropolis, though to be thus further carried through the Eastern Counties to their ultimate market.——The South-Eastern Company design to form an immense locomotive establishment at Ashford, where the following and other buildings comprise but one-half of the works intended to be carried out simultaneously with their new lines. The works alluded to consist of a large engine shed, a repairing shop, smiths' and boiler shops, and tender shed. The engine shed, which is for sixteen locomotives, with tenders, is 208 feet 9 inches, by 63 feet. Four lines of rail extend the whole length of the building. The repairing shop has room for fifteen engines and tenders, length 395 feet by 45. Attached is to be a stationary engine of twenty-five horse power, for driving the works. A transverse crane, to move on rails, along this shop, will lift twenty tons at its centre. The smithy, which will contain twenty fires, is 176 feet long by 45 wide, and 28 high.——A bridge at Timsbury, over the Salisbury and Bishopstoke branch line has just fallen in.——The Shiffnall contract on the Shrewsbury and Birmingham line has been let to Mr. M'Leod of Gloucester.——Arrangements are in progress for the erection of the central station at Chester on an extensive scale, and at an estimated cost of 80,000*l.* A new and improved approach to the city is also projected.——In a late newspaper paragraph, it was announced, that a contract for works between Peterborough and London, on the London and York line, had been let to Mr. Brassey at 120,000*l.*, whereas Mr. Brassy's tender, which was for 75 miles, or the whole distance from Peterborough to London, was, in fact, 120,000*l.* below the next lowest bidder.——Contracts for 35,000 tons of rails for the London and York have been taken by the two firms of Bailey Brothers and the Colebrook Dale Company, but chiefly the former, at or about 10*l.* delivered; the rails to be only 72lb. ones. Sir John Guest and others declined, it is said; not liking the conditions, one of which, as reported, is, that if, within twelve months after the rails are laid down, the engineer disapprove of them, he may order the contractor to take them back, without any appeal from his decision. ——At Middlesborough, an extensive market-house and new town hall were lately opened. We have already repeatedly noticed this striking manifestation of the creative power of railways (*inter alia*, see vol. iv., pp. 137, 316). The thriving town which has here so rapidly sprung up, besides its spacious docks and coal drops, and its excellent port, accessible at all times, its custom-house and ship-building yards, 'tis church and chapels, has now several schools, a mechanics' institution, news' room, iron-foundries, and extensive rolling mill for bar-iron, &c. &c., and has for some years been lighted with gas. In business it now so far outvies the port of Stockton, of which it may be said to be an off-shoot, that while in 1844 and 1845 the shipments of coals at Stockton were respectively 22,644 and 21,170 chaldrons, those at Middlesborough were 137,885, and 195,796 chaldrons. By one establishment at Middlesborough, it is said that 70,000 chaldrons of Brancepeth coke were shipped to Railway and Iron-foundry Companies and others, throughout the three Kingdoms.——The North British Line is said to be on the eve of passing into Mr. Hudson's hands on a guarantee of 8 per cent. with half profits.——On the Dublin and Kingstown Line, second class carriages are henceforth to be lighted at night, along with the first class. ——The Board of Control and the Directors of the East-India Company have at length decided upon giving their sanction to the introduction of railway communication into British India on the following conditions:—The Direct Trunk, or East-India Line, is to be adopted; the Government guaranteeing four per cent. to the shareholders. The amount guaranteed is fixed at 3,000,000*l.* to commence with: the guarantee to extend over fifteen years: Government to have the privilege of purchasing the railway after thirty years from the date of its completion, at the then fair market value of the property: the company to be incorporated by an act of the Legislative Council as well as by charter.——The preparatory works for the railway from Rome to the frontier of Naples and Civita-Vecchia have already commenced.——The French Minister of Public Works has just nominated a commission to report on the experiments commenced on the Sceaux Railway, constructed after a system of curves of small radius and worked by articulated carriages. The commission is also to report on the proceedings of the atmospheric railway established from Nanterre to St. Germain.—— The Dieppe Railway Tunnel has been bored (length 2,400 metres), and the mason-work begun; the engineer, Mr. Newton, having placed the first bricks in presence of Mr. Smith, the Company's agent, and the workmen.—— The virtual power of levelling the hills with the filled-up valleys, by piercing through the bowels of them, as in tunnelling operations, is likely, it appears, to receive a mighty accession of force from the operative aid of machinery, experiments with which, according to the *Moniteur Belge*, have been already made, in order to test the power of penetrating the Alps through the great projected tunnel about to be commenced on one of the Italian lines. "The machine was placed in front of the web, and effected a bore to the depth of eighteen centimetres in thirty-five minutes. At this rate the new invention will complete upwards of five metres of bore per day, and the proposed tunnel through Mount Cenis will be finished in the space of three years. The experiments have been repeated twice before several of the first engineers of France, and with the most complete success."

ELECTRO-TELEGRAPHIC PROGRESS.

The electric telegraph on the Midland Railway was opened for public use on Friday week, so that communication may now be made between Leeds, Normanton, Masborough, Sheffield, Chesterfield, Derby, Leicester, Rugby, Burton, Tamworth, Birmingham, Nottingham, Newark, and Lincoln, at the following rates per mile, namely:—Under ten words, 1d.; above ten, and under twenty, 1½d.; above twenty, and under thirty, 3d.; and for every additional ten words, one halfpenny per mile. A messenger, if required, may be dispatched from any of the above stations, on foot, at 1s. per mile; or if by postchaise, on a reasonable remuneration. In case of any message failing through the defect of the instrument, or neglect of the company's servants, the money will be returned. Messages relating to luggage lost or mislaid by the company's servants, are to be sent free of charge. ——By the way, the electric telegraph, like every good thing, is occasionally turned to evil account, as well as to good. We do not at present allude to the merely business qualifications of this winged Mercury, or swift-flying messen-

commerce, enabling the speculating devotee, who may be first in consulting the oracle, to steal a march on his less ardent or sagacious fellow, thereby "netting 50*l.* in a quarter of an hour," by outrunning, at least, if not by overreaching, his friend. What we have more particularly in our eye at present is, the alleged existence of certain malpractices of those devotees of the commercial god—the Americans—of a kindred order, though of a slightly darker shade; more akin, indeed, to the dark than to the bright side of the two-faced patron of commerce, trickery, and thieving. The malpractices complained of are said to have occurred at New York, where speculators "have managed to get the business news from England in advance of the press, and in this way have 'made great operations.' One or two more such instances of abuse," adds our authority, the *New York Correspondence*, "will effect a very good object,—forcing the telegraph, like the mail-post, into the exclusive hands of the government."

SIR,—In the new edition of Templeton's "Engineers and Contractors' Pocket Book," a mistake occurs, to which I beg to allude through your most practical columns, because it is in an article of considerable interest, on the electric telegraph, and the passage in question is likely to mislead, with regard to one of the fundamental laws of electro-magnetism.

It is stated, that "if we imagine a man to have the (electric) current transmitted through his body, the positive wire being applied to his feet, and the negative to his head, so that the current flows from his feet upwards, then a magnetic needle suspended freely before him, will place itself at right angles to his body, the north pole being to his left, and the south to his right. *If he turn half round, so as to present his back to the needle*, or if the wires be reversed, *the needle will place itself in an opposite position.*"

The first part of this latter statement (in italics) is surely incorrect. When once a needle has been deflected by an electric current in a particular direction, it will not alter its position while the current exists, unless either—1st, The direction of the current, or 2nd, The situation of the wire with respect to the needle, or 3rd, The situation of the needle with respect to the wire, be altered. Either one of these alterations would produce a variation in the needle; but the turning half round of a man, or the twisting half round of a portion of the connecting wires on its own axis, if it were made capable of such a motion, would have no effect on the needle. The man's right hand would be where his left had been, and that would be the only change.

I am, Sir, &c., A. D.

SUBJECTS FOR PRIZE ESSAYS.

AMONG the subjects on which the council of the Institution of Civil Engineers invite communications, for premiums, are the following:—

1. The best mode of combining materials, by arranging or cementing them together, so as to insure uniformity of action from change of temperature.
2. On the construction of retaining and wharf walls, with examples of failure and the causes.
3. The construction of piers and moles, whether solid or on arches, in a tideway.
4. The conveyance of fluids in pipes, under pressure, and the circumstances which usually affect the velocity of their currents; with accounts of water-works and gas-works.
5. The construction of girder bridges, whether of iron or timber.
6. The construction of wrought-iron roofs, for covering considerable areas.
7. The internal arrangements of the termini, and intermediate stations of railways, whether for passengers or merchandize; and whether independent of, or connected with, inland navigation.
8. The various modes of boring artesian wells, and the geological formations which have been found most productive of water.

The communications must be forwarded by the 31st of May next.

THE ANCIENT CHURCH RUINS AT DONCASTER,

DISCLOSED IN RAZING THE OLD TOWN-HALL.

THE ruins of the very ancient church or chapel of St. Mary Magdalene have appeared like a shadow, and so they are likely to depart; for the very necessity under which they have come to be disentombed from the less ancient buildings in which they were embodied, in a manner compels their final demolition, in order to make way for the new buildings to be erected in their place.

The attention and interest of the Archæological Institute, however, have been engaged on behalf of their preservation; and it is to be hoped that "one of the most unique and valuable specimens of middle age architecture which this country can produce," as this has been already confidently characterized, will, by some means, or under some form or arrangement, be preserved; since, though there are abundant examples of the more decorated Anglo-Norman style to be met with, there are extant very few such specimens of the earlier character which the remains of this venerable pile appear to exhibit. The whole character of the building, indeed, as observed by a writer in the *Doncaster Chronicle*, to which, and to the *Gazette*, we are indebted for our knowledge of this interesting discovery, "is of that rude, plain, and heavy sort, relieved only by the simplest efforts to lighten and adorn, that we may with much safety conclude this sacred edifice was erected about the period when the Saxon merged into the Norman, and before the decorative work found in the arches and other parts of almost every other Norman building in this country, had come into vogue."

There have been from time to time many and divers speculations as to what portion of the ancient church of St. Mary Magdalene was contained within the site of the late municipal building; but very few suspected that in the walls themselves was entombed nearly the whole columnar arrangement of the ancient church. Such, however, is the fact; and the remains which are now disencumbered of their more modern additions, shew pretty clearly the character of the church of St. Mary Magdalene. It appears to have originally occupied a considerable area, its length outside, from east to west, being 124 feet 7 inches; the nave, 78 feet 9 inches in length, and 23 feet 4 inches in width between the columns; the length of the chancel 37 feet, but it may have extended further eastward.

There are no traces whatever of grooves or any other contrivance for the insertion of glass in the small round-headed apertures, or clerestory windows, if they may be so called, in the north wall, which, with its pillars and arches, constitutes the most entire portion of the remains. Neither, indeed, are there any such traces in other and larger openings of the same character in this, and in the north wall of the chancel, nor were there any in the demolished south wall.

Among the indications of past customs brought to light in this long-buried pile, are several patches of painted plaster work on the wall of the chancel. These show that the interior of this part of the building was covered with a thin coating of white plaster, and this afterwards marked out with black lines into a sort of ashler work. On the centre of every alternate stone in this is a sort of cinque-foil, rudely painted in red, with a curved line or stalk of the same colour, coiling round the flower. On the other stones there have been some red and black characters, but these are quite defaced. Over the arch separating the nave from the chancel, and on the west side, are also some characters, or scroll work, painted in shades of dirty red and white.

It is now quite evident that there has been no tower or steeple attached to this building, unless, as is very probable, the west end wall of the chancel supported a small bell turret. The north and south walls of the nave are 3 feet thick; the west end wall 3 feet 3 in.

It is a somewhat singular circumstance, that there is not the slightest trace of a foundation having been laid for this massive structure. The huge walls and massive columns have been built upon the bare surface of the ground; and the level of the original floor of the church would correspond very nearly with that of the depressed portion of the Magdalene's, near the south-west corner of the Town Hall.

From the decayed state of the columns and other parts of the nave, it is clearly evident that the church or chapel of St. Mary Magdalene stood for many years, perhaps centuries, a ruin. It would also seem, from the traces of fire left on much of the stone-work in the lower part of the building, and especially the chancel, that the edifice was destroyed by fire. To this cause, probably, may be attributed its abandonment as a place of public worship, and its subsequent gradual decay, until converted into a grammar-school and town-hall.

THE ANTIQUITIES OF TREVES.

RAILWAYS and steam-boats have made travelling on the continent so very easy, expeditious, and inexpensive, that the sight-loving English may be seen every where, rivalling, in their erratic courses, the almost equally celebrated ramblers, the German students. There is one track where all go alike to enjoy the picturesque and romantic, and this "up the Rhine." For the many thousands who visit this far-famed river, how many tens of our countrymen have made a tour up the Moselle? It is comparatively unknown even among artists; and it is surprising that the majority of the world thus follow each other in the beaten track, like a flock of sheep, turning neither right nor left, and admiring by rote all they are told to admire, totally regardless of the beauty that lies beside them unvisited, and which would more than repay the compliment of inspection. The beauty of this river, which joins the Rhine at Coblentz, has been acknowledged by all men of taste; and the Latin poet Ausonius has sung its praises at a time when Roman princes rowed on its waters; praises which have been echoed by many other "disciples of the tuneful Nine" of more modern date. Upon these banks stood the Belgian Rome, the parent of modern Treves; and here resided some of the later emperors of this all conquering people; while the immense number of Roman coins still existing, which were struck at this city, as well as the magnificent remains of buildings erected by this people, shew the great importance of the place during their dynasty. The situation of the city is most lovely, in a plain surrounded by vine covered hills, the river washing its walls; and the opposite banks, grand in an assemblage of wood and rock of the most picturesque and varied beauty. The hills on either side were dedicated by the Romans to Apollo and Mars. "Thus unto a situation peculiarly lovely they associated the most powerful influence their religion could afford; and we need not wonder if, so placed, so founded, and so protected, the rising city should soon attain to a very unusual prosperity. The importance of Treves, as long as the Roman empire flourished, is abundantly testified by numerous facts; by none more decisively than that she was repeatedly honoured with the presence of the master of the world. Many also, and high sounding, are the epithets bestowed upon her by the writers of that nation. She is designated in their works as the richest, the most distinguished, the most glorious, and the greatest, of the towns on that side of the Alps."

Thus writes Professor Wyttenbach, as translated in Dawson Turner's "Guide to the Roman Antiquities of Treves." After lamenting "how the rude hand of the spoiler, and mouldering touch of time, have destroyed what care, and art, and industry, had reared," he adds, "gone, utterly gone, are the Capitol of ancient Treves, and that senate-house, which, still venerable and massy in its ruins, excited the wonder of Venantius Fortunatus in the 6th century. No traces are to be found of our circus, said to have vied with that of Rome, nor of our imperial palaces. The triumphal arches of Valentinian and Gratian, the Forum, the Thermæ, and the Aqueducts, as likewise the temples and basilicæ, rich in statues and frescoes, have equally disappeared; and it is by tradition alone that we are assured of the existence of that splendid entrance over the Moselle, entitled the *Porta nigra*, which, studded with golden stars, served likewise as a lighthouse. Neither do these, considerable though they be, constitute the half of our losses; many other noble works of art have

CONTEMPORARY ARCHITECTURAL CRITICISM.

It has become an established opinion with writers of the day, that there is but one field which the human intellect leaves uncultivated. That this *dictum* has been applied to architecture, not without reason, we are not quite prepared to deny, but rather to assert, as we have already done, that the present state of architecture is a reproach to the age, and matter for deep regret to its professors. But when it is also put forth as an axiom, in the common criticism of newspapers, that architecture has no reproductive power,—that here is an art which will admit of no alteration, much less improvement, to which the ordinary revivifying influence of new matter is denied,—then we deem it necessary, however little so extreme an opinion may have taken hold of those who have really studied the art and the history of architecture, to protest against the frequent publication of erroneous views, with the sanction which the world at large will generally allow to what is confidently stated in print.—Probably, in no profession are the merits of a production more freely canvassed than in that of architecture; whilst seldom can we find professors so indifferent to the expression of their opinions in the form of publication. Were architectural criticism, generally, in the hands of architects, such writers would estimate conflicting views, and consider the merits of a work ere they would condemn it; with the pen, they would pause to examine what the ready tongue is too prone to say, often with little consideration for propriety of phrase. Instead of a mere repetition of crude or exploded notions, gleaned by the gentlemen who "do the fine arts," from encyclopædias and periodicals, real principles would be ascertained, and enunciated, and the people would have laid before them correct views in art, for those now substituted. Popular opinions upon architecture seem to us matter for the serious attention of architects; influencing, as they do, through the channels we have alluded to, the opinions of the educated, and often supplanting the result of mature reflection in the minds of architects themselves.

A careful examination into the actual state of architecture, considered as a reproductive art, compared with those other arts and sciences which occupy the attention of the world, would, we think, show,—first, a too highly rated estimate of the present exercise of invention in general, and, secondly, a misconception of the position of architecture in the present day, as compared with its state at former epochs. Now we might succeed in proving, that invention, strictly speaking, has never had any existence since the time of the creation. The most happy efforts of ingenuity, called inventions, have never been any thing more than the re-arrangement of matter, or knowledge, previously existing; and discoveries in nature and science, which are not originative, are merely existing facts, made patent, through a careful balance of accompanying circumstances and causes.—It will be recollected, that we are only contending against popular fallacies; there may be some who know better.

But, by those who most of all lament the present state of architecture, a position is expected for it, in which *it* has never been placed, and which has never attached to any science, or to any other branch of art. By these writers it is assumed that architecture—which, let it also be recollected, deals with forms which can strongly impress themselves upon the recollection—should in all its works employ outlines and details, which had not before been met with—forgetting that such would be an exercise of invention, to which humanity is not equal.

By some of these critics it is supposed that the whole matter of architectural design is fully expressed in previously existing styles, and that the merits of any composition under notice, are to be estimated solely by its likeness to the architecture of a former period; whilst the stereotyped phrases of "slavish adherence to precedent," "want of originality," and the like, are used by others, who are unable to judge of the propriety of such condemnation. Were these writers architects, or had they examined the past history of art, they would know, that not architecture only, but every other department of art, has had slow progress; that in changes of style, and in what passes for originality of design, little, comparatively, is due to individuals; and that, in any particular era, had only one inventive mind been exercised, future ages would have found it hard to separate the modifications introduced, from the general style of the date. It is true that architects, and other professors of art, are often able, as in the architecture of Italy during "the revival," to distinguish the style of each master, and to ascribe, where due, the authorship of an invention. But the very circumstance, that the world in general is unable to do this, shews that the stages by which alterations in design are made, are too minute to constitute what the vulgar deem originality, and freedom from the "shackles of precedent." It does not follow because, for example, the capital and order from the Temple of Jupiter Stator are used in a modern building, that the whole design is not as creditable to its architect, and as fine in conception as any building by Palladio, or Vignola, or by an architect of any other period equally lamented as superior to this. In truth, the painter and the sculptor, as well as the architect, if they would produce works which may really be creditable to themselves and to the age, must draw largely for materials and ideas upon the works of predecessors, and because they do this, it does not follow that they render themselves less worthy of the admiration of their contemporaries, or less entitled to their place in the Walhalla of artistic fame. There may be many who repeat, rather than re-combine, and in whose works it is impossible to find the expression of an idea, the origin of which is not at once discernable; but it is our complaint, that ordinary critics do not separate these from the really intellectual and refined, and deny therefore the reproductive power of architecture, or suggest impossible theories for its renovation. What may be called originality in design has really the claim, only because the source of the idea is not, or at least not readily, apparent; for it is the ingenuity in seeking out unexamined and secret sources of ideas, rather than the originating of the ideas themselves, which makes the true artist.

We believe, that amongst the world, it is much easier to recollect the general character of a building, or the design of a capital, or other detail, than the treatment of the composition in a painting or a statue. Consequently the debt which is due to precedent in two of the arts, escapes the eye, whilst it is apparent in architecture; and as those who ordinarily write upon art, know little of its history and principles, it is assumed that architecture is in a position to which it has never before fallen, which is unparalleled in any other branch, and from which it can never recover. Now, indeed, we find, the more we examine into the past history as compared with the present state of art, that there is not quite that reason to doubt the occurrence of a future brilliant era, which many writers would have us suppose. We look back to the age of Grecian art, and find the style then proceeding by stages, scarcely discoverable by the eye, even of an artist; in the early Roman period, and in the Revival, we find a respect for "precedent" which may not unfairly be compared to that, for which we are said to be remarkable; and during the same age of "the revival" we find the Italian and the Gothic styles co-existent, and even practised by the same architects, which is the chief stigma upon architecture now. Even in Gothic architecture, we doubt whether the changes of style appeared as great and important whilst in progress, as they do to us, or whether posterity will not see in our efforts something of general progress, which they will be able to comprehend and classify, somewhat as we are able to do similar periods of co-existant styles, which the history of art, if at all minutely examined, discloses.—That the monuments of art of all ages and styles, can be made to minister to invention and good architecture, we should not find it necessary to state, were not the contrary asserted, in effect, in the writings of critics of the order we have referred to. Such writers, in their hostility to copyism, would deny us even the legitimate and proper use of ancient models, forgetting that even "precedent" may have its value, and, further, afford that which one mind alone could not by nature supply.

There is yet one circumstance in the present state of architecture, which is not wholly without cause for congratulation, and yet may have some immediate effects. It cannot be denied, that the very advantages which architecture has, through the accurate manner in which it is illustrated, are not applied in the way most conducive to excellence in style. But, were it asserted, that in this there could be any thing opposed to the interests of the art, it would in effect be to deny the value of ancient models, which, it is our object to urge, contain the chief matter out of which future excellence in style must be created. Architecture has within it a reproductive power, which can parallel the style of any age; but that power is impeded, whilst the ordinary channels of criticism are made to disseminate views, not founded upon a deep insight into a subject of much difficulty, one which can only be grappled with by those who are perfectly familiar with every branch of the inquiry.

MURAL DECORATIONS: ST. GERMAIN L'AUXERROIS, PARIS.

For four years M. Mottez, a French artist, has been engaged in the decoration of the porch of St. Germain l'Auxerrois, an addition to the main building attributed to the middle of the fifteenth century. He has now finished his work, and produced a series of pictures in fresco, illustrative of the establishment of the Christian religion, conceived in the Gothic spirit, and made to accord in character with the church.

The principal picture is in the tympanum of the great doorway, and represents the Saviour on the cross, supported on the knees of the Father, who sits behind the head of it. Around, at his feet, are clustered the persons who have thrown lustre on the church of France,—all saints but one, and that is Joan of Arc! On the right and left of this are two long upright pictures, with pointed heads, filled with super-posed groups. One, Christ preaching on the mountain, with groups of figures below, illustrating certain commandments; and the other our Saviour on the Mount of Olives, with the Virgin Mary, surrounded by a group of women, at the foot.

Some of the French journals object to the external decoration of a Gothic building with painting; and, secondly, to a return to a style of art long since abrogated.

One of these, *L'Illustration*, offers many objections to such works, and to that now under consideration in particular. "If we candidly examine," says that journal, "this specimen of monumental ornament, the return to polychromatic architecture which has been attempted in the porch of the church of St. Germain l'Auxerrois, leaving out of consideration the work of the painter, of which we will not yet speak, we must frankly own our opinion, that these works which have received so much praise, are neither correct, useful, nor agreeable. Are they legitimate—do they belong to the art of the middle age? is a question that qualified archæologists must decide. They found, under the white-wash, traces of painting at the cathedral of Saint Denis, also at the Sainte-Chapelle of Paris, upon a bas-relief on the outside wall of the choir of Notre Dame, in the cathedrals of Rheims, Chartres, Soissons, &c., but these remains of painting are mostly seen in the interior, and we should, perhaps, commend a zeal which has there restored these works to general favour. There these fanciful ornaments, of a thousand colours, blend well with the play of light produced by the stained glass; and their rich details form in the chapels a natural transition to the rich decorations of the altars." But outside, continues the writer, it is another matter, and he gives reasons for objecting to it. "No architect of taste," he goes on to say, "would think of making a vestibule as costly as a reception-room; and then what place have they chosen for this architectural miniature? We would accept it in some dark place away from the city. But here, in front of the largest and the most beautiful monument in Paris,—in front of the noble architecture of the colonnade of the Louvre, the folly of the toy is made more apparent by contrast. Moreover, is it a wise thing that these works should be under an open portico, open in every direction to the west wind, that is to say, to the rainy quarter which rules in our Parisian climate three parts of the year. When one sees the damps which, in the interior of the church, have greatly spoilt

the paintings recently completed, one must fear that the exterior dampness will cause a more rapid destruction."

The frescoes themselves, the writer thinks, have undoubted merit; they agree with the structure which contains them.

Executed in a plain tone, they harmonise well together, with the exception of some blues, which are rather too bright. In such a work the artist has hardly fair play:—"He was not free to inscribe on those walls his independent fancy;—a figure graceful and young, by the side of a form stiff and gothic; a conception of our time by the side of the traditions of the middle age. He has also sacrificed in his works form to symbolism: and this sacrifice has been in some parts carried very far, as in the tympanum, representing Christ on the cross. The Eternal Father holding between his knees, and sustaining with his extended arms the instrument of punishment, forms, with the body of the victim, an ugly and ungraceful whole. Further, if the Holy Spirit, the Father and the Son, are here only as symbols, it is perhaps wrong to have given to the two angels, at the right and left of the Eternal, too animated gestures of human affliction. The skies of gold, on which are cut the lines of the horizon; the discs of gold, on which the heads are inlaid; the want of ethereal perspective; the sacrifice of geometrical perspective; all in this great composition shew the shackles of conventional art. And is it not a hard necessity that condemns the artist to suppress inspiration, to sadden form and colour, to stifle life and sentiment, for the gain of a useless concordance with an old form, once a lively work of the faith, now a dead letter, and not understood by the crowd? Nevertheless, whatever we may say of the system, let us do justice to the persevering courage, the long and difficult researches, of the artist, who, during four seasons, has devoted himself to this great work, has lived as a man of the middle ages, and has brought to completion, with a great character of unity, this immense monumental decoration."

VICTORIA PARK AND THE "WOODS AND FORESTS."

SIR JOHN CASS'S CHARITY LANDS.

Correspondents have drawn our attention to the eastern Park, complaining of the tardy pace at which the Commissioners of Woods and Forests have proceeded in all the arrangements relating to this improvement. The Act for its formation was obtained some years ago, and it is only *now* partially laid out and planted. The respectable community on the eastern side of the metropolis have really ground for complaint in this hope long deferred. *When* completed, it is said, that, in some respects, it will outvie Regent's or Hyde Park. A lake, six acres in area, with a fountain to throw fifty feet high, is promised; and the size and costliness of the lodge and bridge (near where old Bonner's Hall stood) bears out the assertion. The lodge, designed by Mr. Pennythorne, may be called Elizabethan in character, and is built of red brick with stone dressings. It is lofty, and has a tower, the lower part of which is open on three sides to form a porch. At the time of the formation of this park, there was much discussion as to the site. The landowners of Stepney, Limehouse, and its vicinity, urged on the Commissioners that the south side of the Mile-end-road would form a more desirable position for a public park; but it seems clear that the site chosen was really better for the public weal,—the districts of Bow, Stratford, Hackney, Dalston, Clapton, Kingsland, and Stoke Newington, will all, more or less, derive benefit, when the park is finished and the approaches made; and the projected line of road from Limehouse will open a suitable avenue from that quarter. The Commissioners of Woods have given notice of application to Parliament in the ensuing session, with reference to this approach, and also for powers to form an approach from Cambridge-heath gate, and another from Bethnal-green-road. Surely, this was a *faux pas* on the part of the authorities to omit provision for the approaches till now; another two or three years will be absorbed, which might have been saved if the approaches had at least been formed simultaneously with the park. Where is Victoria Park? is not at all an unfrequent question, even within a hundred yards of the gate, so obscured and hidden is it in its position; the block of houses on the eastern side of Bethnal-green-road, and thence northward to Cambridge-heath, form a perfect *curtain* to the park from the London side. It might seem hypercritical to carry these remarks further, but really it is too true; at the present moment, there is not one direct and accessible road by which a visitor could drive to the park. No person standing at the Cambridge-heath gate could imagine that he was within two minutes' walk of the park, and might see the lodge if he knew where to look for it. Surely, as a mere piece of worldly policy, this is unwise.

The land in Victoria-park will *not let* for building purposes until the public know and can see the way to it. It was the natural hope of all who were interested in the improvement of the eastern side of the metropolis, that the park would excite to a better class of buildings than had been formerly erected. In this respect some few have honourably emulated, and have gone forward with energy to the work. There is an important charity estate, known as Sir John Cass's Charity, lying north of the park, and forming the entire northern boundary; and the trustees of this property seem resolved to do their part for the improvement of the neighbourhood. They have swept away a wretched village of houses (or hovels, more properly), formerly known as Botany Bay; and this peculiar cognomen arose out of the circumstance of so many of its inhabitants being sent to the *real place*, not for their good deeds, it may well be believed.*

The estate of Sir J. Cass's Charity bids fair to become a most important one in this district; and when the contemplated approach is made from Cambridge-heath to Gun-street, and the other roads in course of formation are carried out, it cannot fail to become popular as building property: new roads and sewers are being formed. The Governors of St. Thomas's Hospital have also an estate at the north-west corner of the park; but they do not seem yet to be in the field for building purposes. It is satisfactory to find, that large owners of property are making a resolute effort to improve the eastern side of the metropolis. There is much to be done in the neighbourhood of Hackney, as any one who has had occasion to travel in a vehicle, in any direction but the one main line to London (and that is any thing but a direct one) will verify.

If those who are interested would unite and obtain a local Act, they might at comparatively small cost improve their own property and benefit the public greatly. An immense number of small houses have been built in Hackney and Homerton within a few years, and unless some general plan for improvement be determined on quickly, it may be too late. In the neighbourhood of the park an enormous church (St. John of Jerusalem) is being erected, under Mr. Hakewill, which promises well. It is a cross church, early English in style, and has a most capacious chancel. The roofs are now being put on.

* Sir John Cass was a worthy alderman of London, who died in 1718. His father, Thomas Cass, was carpenter to the Royal Ordnance, and acquired a large fortune, which descended to Sir John. The latter built two schools near the church of St. Botolph, Aldgate (opened 1710), besides some other buildings contiguous to these; and provided salaries for the master and mistress. He willed, that after the death of his wife the whole of his estate should be held by certain trustees, to provide the charity-children of his schools with a dinner every day, and for other purposes; but died with the pen in his hand without fully completing the instrument; which led to much litigation and difficulty, not settled till thirty years after Cass's death. The estate is managed by twenty-one trustees. Sir James Flower is the treasurer. It is proposed to build schools at Hackney in a short time.

THE NEW HOUSES OF PARLIAMENT,

AND THE PROGRESSIVE RISE OF THE RIVER.

I have noticed, for nearly half a century, the gradual and regular rise of the waters of the river Thames. My attention was first drawn to it by finding that extreme high tides were not preceded, nor succeeded by, similar tides.

These were recorded by the watermen of the Westminster Horseferry, by notches cut by them on a post there, ere the post was removed when the street was raised.

This subject led me to conjecture as to the origin of the Marsh Walls.

I now observe, that professional men in reporting on some localities, such as Westminster, say that the sewers there were originally too low. But it appears from what I shall relate, that the said sewers were high enough when they were first made; but are not so now, owing to the rise of the river.

It appears that I am the first person who has noticed a circumstance so universally continuously evident. The architects of modern, as well as ancient buildings, were not aware of it, as will be too plainly seen by referring to the floor of Westminster Hall, the upper line of the starlings of old London-bridge, the gate of Lambeth Palace, the York Water-gate, Adelphi, the level of the wharfs there, &c.

A paper by me, going more fully into the subject, was printed in the *Morning Herald* of April 4th, 1843.

In 1844, the Commissioners for improving the metropolis published their first report, comprising the evidence as to the proposed embankment of the Thames, by Mr. Walker, Mr. Page, Mr. Cubitt, and other scientific men, *up to August*, 1843, with numerous plans, sections, &c. of the river.

Not one of these gentlemen alluded to the rise of the river; but, on the contrary, they all refer to a *fixed standard level of high water, called Trinity datum* (made, it appears, in 1800). And in referring to the Marsh Walls, they attribute the formation of them to the Romans, *vide* pages 66, 212, 230.

My theory has hitherto been met at every step by contradiction, although it is supported by the science of physical geography, combined with geology.

It appears that the ground line or plinth of the palatial Houses of Parliament is already below the level of extreme high tides. The difference of the rise of the highest tide before the Parliament Houses were burnt down, to the last highest tide, viz. in December, 1845, is but ten inches. The preceding highest tide was in October, 1841. These two tides were very carefully noticed at the "Fox under the Hill," Adelphi, the people there being up at the late hours both these tides occurred at; the difference was exactly one inch; the lines of elevation are painted in the tap-room there.

The gate-towers of Lambeth Palace were built by Cardinal Morton, about 1490. It is evident, by the height of the door-way there, that the ground was elevated two feet, when the hall was rebuilt at the restoration; the last highest tide was 18 inches above the line of the said present raised ground or road.

There is a house in Upper Fore-street, Lambeth, with large chesnut beams and uprights; this appears of about the time of King Edward the First; the first floor is now only 3 feet 1 inch above the street, which is close to the river; therefore, when this house was built, the lowest marsh, viz. that opposite to Greenwich, was above the level of the highest tide, and might then be entitled to its name of "The *Isle* of Dogs."

The said ancient house in Fore-street is now in a most neglected and decayed state. There is a tradition there that it was part of a bishop's house, and had steps in front, with trees before it. I cannot find any account of it in topographical works, but Mr. Green, the proprietor, says it adjoined the remains of a larger building of similar materials.

The River Locks.—In 1803 there was no lock between London and Windsor. The locks since made must in a slight degree increase the height of some tides at London.

The Old London-bridge was taken down before the commencement of the palatial Houses of Parliament. The removal of the old bridge has very much altered the *ebbs*, but can only to a slight degree affect the height of the flood tides, because there was no fall when the tide was running up, but only a strong current. The fall was greatest about half an hour before low water (above the bridge), when it has been as much as five or six feet,—then keeping the water above the bridge, at that time of so much superior elevation—of course, the higher portion of water kept running down, until the water below bridge rose to a common level.

T. Higgs.

Fall of a Wall.—A wall 10 feet high, at Blackwall Point, was thrown down last week, by piling sand against it, and a person who was passing at the moment was killed.

RAILWAYS IN THE PAPAL STATES.

In a notification lately issued by Cardinal Gizzi, secretary of state, the Pope authorizes the execution of the lines of railway undermentioned:—1. That from Rome through the *Valle del Sacco*, to the Neapolitan confine near Ceprano. 2. That joining Rome with the port of Anzio. 3. One from Rome to Civita Vecchia. 4. That from Rome to Bologna, by way of Ancona, which passes through the most populous parts of Umbria, as Foligno and the valley of the river Potenza, and follows in part the traces of the Via Flaminia Emilia. —The conditions on which these lines shall be assigned to the companies, represented by pontifical subjects, after approval, are, the presentation of:— 1st. The description of the lines contemplated. 2. "Artistic and economic information" which they may be able to give in regard to these lines. 3. The statement of the time in which they propose to complete the studies, and the works, if approved of, and of the time for which they demand the enjoyment of the concession after the completion of the works. 4. The security they propose to give in favour of the proprietors of the lands, and the security to the Government, before the works are undertaken, that they shall be completed. 5th. The exposition of the means by which they propose to conduct the undertaking. The interests of the pontifical subjects being considered, both as regards capital and work.—Three months are granted for presenting the projects, with these conditions, which time may be extended on proper representation.—The Government also notifies that the construction of these lines being secured, it will take into consideration the line from Foligno to Perugia, and Citta di Castello, through the *Valle del Tevere*, and others, whose utility may be perceived; and it further offers a gold medal of the value of 1,000 scudi, to whomsoever may indicate the best mode of passage between Umbria and the *Marche*.—This resolution of the Papal Government, holding out, as it does, the prospect of many other "judicial reforms, and economic ameliorations," in the words of the notification—will have a most important and invigorating influence upon the prosperity of the Roman states, and the effects of the enlightened policy of the present Pope will reach, through the still active agency of the Roman Catholic Church, far beyond the mere confines of Italy. —We trust, that a hint, given in the programme of conditions, may warrant us in assuming that some arrangements will be made for the careful preservation of all works of art which the works will approach, or which may be discovered during their execution.—The *Roman Advertiser*, the English newspaper published in Rome, still continues to give much interesting information to residents, and those who have visited "the eternal city," and may, we perceive, now be seen in London.

RAILWAY JOTTINGS.

The invention of a railway speed-register, or regulator, has been already cursorily noticed in *The Builder*, but no account of its mechanism has appeared till now that it has been called for and constructed for use on the East-Indian Railway, for the guidance of the servants, chiefly native, on that line; a circumstance likely to lead to its general adoption at home as well as abroad, as it provides for a want continually experienced, and hitherto inadequately supplied by tabular forms. It consists of a dial of about five feet in diameter, upon the upper half of which is a series of numbers, showing the distances of each station along the line, the number of hours occupied by every train in both directions between each station, and the several stations and stopping-places between the extreme termini. In the centre is a clock dial, by which the departure and arrival of every description of train can be ascertained at a glance. The several trains are indicated by elongated hands, which are worked by a movement constructed according to the speeds required, and attached to the works of the clock. In the railway regulator the goods' train travels at the rate of 12½, the passenger train at 25, and the express train at 50 miles an hour. The trunk line movements are all indicated upon the outer circle; and the branches are provided for by a similar division of the dial, nearer the centre, by which means additional branches can at any time be introduced, and put in motion when required, without inconvenience, expense, or derangement of the original machine.——The saving of expense in the transit, by railway, of the yearly supply of 150,000 head of cattle, and 1,500,000 sheep, to the metropolitan market, is estimated at no less than 675,000*l.*; and considering that the trouble and expense of conveying live cattle and sheep are much greater than those of the mere dead-weight, from which, moreover, a heavy surplus of waste, garbage, &c., would be further deducted; the saving might be greatly increased by the transmission of the so far ready-prepared article instead of the live, as well as raw, material, with all its intolerable annoyances, both metropolitan and provincial.——The rate-payers and residents of Regent's-park and its vicinity have memorialized the Marylebone vestry against the Regent's Canal Railway scheme, as likely to deteriorate the property and destroy the retirement of the neighbourhood, as well as to stop the equestrian, and take away the security of the pedestrian, exercise in the park.——A brisk trade in coals, to be unshipped at Blackwall in order to avoid the heavy London port dues, and transmitted along the Blackwall and Stratford lines to Stamford, Cambridge, &c., is anticipated since the announcement of the Eastern Counties Company's intention to carry coals along their line. From Lynn, too, by way of Ely, an additional supply is looked for. Yorkshire coals are thus expected to be had at Cambridge for 17s. to 18s. a ton, and even Newcastle for 21s. to 22s,—less, in fact, than in the metropolis, though to be thus further carried through the Eastern Counties to their ultimate market.——The South-Eastern Company design to form an immense locomotive establishment at Ashford, where the following and other buildings comprise but one-half of the works intended to be carried out simultaneously with their new lines. The works alluded to consist of a large engine shed, a repairing shop, smiths' and boiler shops, and tender shed. The engine shed, which is for sixteen locomotives, with tenders, is 208 feet 9 inches, by 63 feet. Four lines of rail extend the whole length of the building. The repairing shop has room for fifteen engines and tenders, length 395 feet by 45. Attached is to be a stationary engine of twenty-five horse power, for driving the works. A transverse crane, to move on rails, along this shop, will lift twenty tons at its centre. The smithy, which will contain twenty fires, is 176 feet long by 45 wide, and 28 high.——A bridge at Timsbury, over the Salisbury and Bishopstoke branch line has just fallen in.——The Shiffnall contract on the Shrewsbury and Birmingham line has been let to Mr. M'Leod of Gloucester.——Arrangements are in progress for the erection of the central station at Chester on an extensive scale, and at an estimated cost of 80,900*l.* A new and improved approach to the city is also projected.——In a late newspaper paragraph, it was announced, that a contract for works between Peterborough and London, on the London and York line, had been let to Mr. Brassey at 120,000*l.*, whereas Mr. Brassy's tender, which was for 75 miles, or the whole distance from Peterborough to London, was, in fact, 120,000*l.* below the next lowest bidder.——Contracts for 35,000 tons of rails for the London and York have been taken by the two firms of Bailey Brothers and the Colebrook Dale Company, but chiefly the former, at or about 10*l.* delivered; the rails to be only 72lb. ones. Sir John Guest and others declined, it is said; not liking the conditions, one of which, as reported, is, that if, within twelve months after the rails are laid down, the engineer disapprove of them, he may order the contractor to take them back, without any appeal from his decision. ——At Middlesborough, an extensive market-house and new town-hall were lately opened. We have already repeatedly noticed this striking manifestation of the creative power of railways (*inter alia*, see vol. iv., pp. 137, 316). The thriving town which has here so rapidly sprung up, besides its spacious docks and coal drops, and its excellent port, accessible at all times, its custom-house and ship-building yards, its church and chapels, has now several schools, a mechanics' institution, news' room, branch bank, various manufactories, three iron-foundries, and extensive rolling mill for bar-iron, &c. &c., and has for some years been lighted with gas. In business it now so far outvies the port of Stockton, of which it may be said to be an off-shoot, that while in 1844 and 1845 the shipments of coals at Stockton were respectively 22,644 and 21,170 chaldrons, those at Middlesborough were 137,885, and 195,796 chaldrons. By one establishment at Middlesborough, it is said that 70,000 chaldrons of Brancepeth coke were shipped to Railway and Iron-foundry Companies and others, throughout the three Kingdoms.——The North British Line is said to be on the eve of passing into Mr. Hudson's hands on a guarantee of 8 per cent. with half profits.——On the Dublin and Kingstown Line, second class carriages are henceforth to be lighted at night, along with the first class. ——The Board of Control and the Directors of the East-India Company have at length decided upon giving their sanction to the introduction of railway communication into British India on the following conditions:— The Direct Trunk, or East-India Line, is to be adopted; the Government guaranteeing four per cent. to the shareholders. The amount guaranteed is fixed at 3,000,000*l.* to commence with: the guarantee to extend over fifteen years: Government to have the privilege of purchasing the railway after thirty years from the date of its completion, at the then fair market value of the property: the company to be incorporated by an act of the Legislative Council as well as by charter.——The preparatory works for the railway from Rome to the frontier of Naples and Civita-Vecchia have already commenced.——The French Minister of Public Works has just nominated a commission to report on the experiments commenced on the Sceaux Railway, constructed after a system of curves of small radius and worked by articulated carriages. The commission is also to report on the proceedings of the atmospheric railway established from Nanterre to St. Germain.—— The Dieppe Railway Tunnel has been bored (length 2,400 metres), and the mason-work begun; the engineer, Mr. Newton, having placed the first bricks in presence of Mr. Smith, the Company's agent, and the workmen.—— The virtual power of levelling the hills with the filled-up valleys, by piercing through the bowels of them, as in tunnelling operations, is likely, it appears, to receive a mighty accession of force from the operative aid of machinery, experiments with which, according to the *Moniteur Belge*, have been already made, in order to test the power of penetrating the Alps through the great projected tunnel about to be commenced on one of the Italian lines. "The machine was placed in front of the web, and effected a bore to the depth of eighteen centimetres in thirty-five minutes. At this rate the new invention will complete upwards of five metres of bore per day, and the proposed tunnel through Mount Cenis will be finished in the space of three years. The experiments have been repeated twice before several of the first engineers of France, and with the most complete success."

ELECTRO-TELEGRAPHIC PROGRESS.

The electric telegraph on the Midland Railway was opened for public use on Friday week, so that communication may now be made between Leeds, Normanton, Masborough, Sheffield, Chesterfield, Derby, Leicester, Rugby, Burton, Tamworth, Birmingham, Nottingham, Newark, and Lincoln, at the following rates per mile, namely:—Under ten words, 1d.; above ten, and under twenty, 1½d.; above twenty, and under thirty, 3d.; and for every additional ten words, one halfpenny per mile. A messenger, if required, may be dispatched from any of the above stations, on foot, at 1s. per mile; or if by postchaise, on a reasonable remuneration. In case of any message failing through the defect of the instrument, or neglect of the company's servants, the money will be returned. Messages relating to luggage lost or mislaid by the company's servants, are to be sent free of charge. ——By the way, the electric telegraph, like every good thing, is occasionally turned to evil account, as well as to good. We do not at present allude to the merely business qualifications of this winged Mercury, or swift-flying messenger—and to be, ere long, enthroned divinity—of

commerce, enabling the speculating devotee, who may be first in consulting the oracle, to steal a march on his less ardent or sagacious fellow, thereby "netting 50*l.* in a quarter of an hour," by outrunning, at least, if not by overreaching, his friend. What we have more particularly in our eye at present is, the alleged existence of certain malpractices of those devotees of the commercial god—the Americans—of a kindred order, though of a slightly darker shade; more akin, indeed, to the dark than to the bright side of the two-faced patron of commerce, trickery, and thieving. The malpractices complained of are said to have occurred at New York, where speculators "have managed to get the business news from England in advance of the press, and in this way have 'made great operations.' One or two more such instances of abuse," adds our authority, the *New York Correspondence*, "will effect a very good object,—forcing the telegraph, like the mail-post, into the exclusive hands of the government."

Sir,—In the new edition of Templeton's "Engineers and Contractors' Pocket Book," a mistake occurs, to which I beg to allude through your most practical columns, because it is in an article of considerable interest, on the electric telegraph, and the passage in question is likely to mislead, with regard to one of the fundamental laws of electro-magnetism.

It is stated, that "if we imagine a man to have the (electric) current transmitted through his body, the positive wire being applied to his feet, and the negative to his head, so that the current flows from his feet upwards, then a magnetic needle suspended freely before him, will place itself at right angles to his body, the north pole being to his left, and the south to his right. *If he turn half round, so as to present his back to the needle*, or if the wires be reversed, *the needle will place itself in an opposite position*."

The first part of this latter statement (in italics) is surely incorrect. When once a needle has been deflected by an electric current in a particular direction, it will not alter its position while the current exists, unless either—1st, The direction of the current, or 2nd, The situation of the wire with respect to the needle, or 3rd, The situation of the needle with respect to the wire, be altered. Either one of these alterations would produce a variation in the needle; but the turning half round of a man, or the twisting half round of a portion of the connecting wires on its own axis, if it were made capable of such a motion, would have no effect on the needle. The man's right hand would be where his left had been, and that would be the only change.

I am, Sir, &c., A. D.

SUBJECTS FOR PRIZE ESSAYS.

Among the subjects on which the council of the Institution of Civil Engineers invite communications, for premiums, are the following:—

1. The best mode of combining materials, by arranging or cementing them together, so as to insure uniformity of action from change of temperature.
2. On the construction of retaining and wharf walls, with examples of failure and the causes.
3. The construction of piers and moles, whether solid or on arches, in a tideway.
4. The conveyance of fluids in pipes, under pressure, and the circumstances which usually affect the velocity of their currents; with accounts of water-works and gas-works.
5. The construction of girder bridges, whether of iron or timber.
6. The construction of wrought-iron roofs, for covering considerable areas.
7. The internal arrangements of the termini, and intermediate stations of railways, whether for passengers or merchandize; and whether independent of, or connected with, inland navigation.
8. The various modes of boring artesian wells, and the geological formations which have been found most productive of water.

The communications must be forwarded by the 31st of May next.

THE ANCIENT CHURCH RUINS AT DONCASTER,

DISCLOSED IN RAZING THE OLD TOWN-HALL.

The ruins of the very ancient church or chapel of St. Mary Magdalene have appeared like a shadow, and so they are likely to depart; for the very necessity under which they have come to be disentombed from the less ancient buildings in which they were embodied, in a manner compels their final demolition, in order to make way for the new buildings to be erected in their place.

The attention and interest of the Archæological Institute, however, have been engaged on behalf of their preservation; and it is to be hoped that "one of the most unique and valuable specimens of middle age architecture which this country can produce," as this has been already confidently characterized, will, by some means, or under some form or arrangement, be preserved; since, though there are abundant examples of the more decorated Anglo-Norman style to be met with, there are extant very few such specimens of the earlier character which the remains of this venerable pile appear to exhibit. The whole character of the building, indeed, as observed by a writer in the *Doncaster Chronicle*, to which, and to the *Gazette*, we are indebted for our knowledge of this interesting discovery, "is of that rude, plain, and heavy sort, relieved only by the simplest efforts to lighten and adorn, that we may with much safety conclude this sacred edifice was erected about the period when the Saxon merged into the Norman, and before the decorative work found in the arches and other parts of almost every other Norman building in this country, had come into vogue."

There have been from time to time many and divers speculations as to what portion of the ancient church of St. Mary Magdalene was contained within the site of the late municipal building; but very few suspected that in the walls themselves was entombed nearly the whole columnar arrangement of the ancient church. Such, however, is the fact; and the remains which are now disencumbered of their more modern additions, shew pretty clearly the character of the church of St. Mary Magdalene. It appears to have originally occupied a considerable area, its length outside, from east to west, being 124 feet 7 inches; the nave, 78 feet 9 inches in length, and 23 feet 4 inches in width between the columns; the length of the chancel 37 feet, but it may have extended further eastward.

There are no traces whatever of grooves or any other contrivance for the insertion of glass in the small round-headed apertures, or clerestory windows, if they may be so called, in the north wall, which, with its pillars and arches, constitutes the most entire portion of the remains. Neither, indeed, are there any such traces in other and larger openings of the same character in this, and in the north wall of the chancel, nor were there any in the demolished south wall.

Among the indications of past customs brought to light in this long-buried pile, are several patches of painted plaster work on the wall of the chancel. These show that the interior of this part of the building was covered with a thin coating of white plaster, and this afterwards marked out with black lines into a sort of ashlar work. On the centre of every alternate stone in this is a sort of cinque-foil, rudely painted in red, with a curved line or stalk of the same colour, coiling round the flower. On the other stones there have been some red and black characters, but these are quite defaced. Over the arch separating the nave from the chancel, and on the west side, are also some characters, or scroll work, painted in shades of dirty red and white.

It is now quite evident that there has been no tower or steeple attached to this building, unless, as is very probable, the west end wall of the chancel supported a small bell turret. The north and south walls of the nave are 3 feet thick; the west end wall 3 feet 3 in.

It is a somewhat singular circumstance, that there is not the slightest trace of a foundation having been laid for this massive structure. The huge walls and massive columns have been built upon the bare surface of the ground; and the level of the original floor of the church would correspond very nearly with that of the depressed portion of the Magdalene's, near the south-west corner of the Town Hall.

From the decayed state of the columns and other parts of the nave, it is clearly evident that the church or chapel of St. Mary Magdalene stood for many years, perhaps centuries, a ruin. It would also seem, from the traces of fire left on much of the stone-work in the lower part of the building, and especially the chancel, that the edifice was destroyed by fire. To this cause, probably, may be attributed its abandonment as a place of public worship, and its subsequent gradual decay, until converted into a grammar-school and town-hall.

THE ANTIQUITIES OF TREVES.

Railways and steam-boats have made travelling on the continent so very easy, expeditious, and inexpensive, that the sight-loving English may be seen every where, rivalling, in their erratic courses, the almost equally celebrated ramblers, the German students. There is one track where all go alike to enjoy the picturesque and romantic, and this "up the Rhine." For the many thousands who visit this far-famed river, how many tens of our countrymen have made a tour up the Moselle? It is comparatively unknown even among artists; and it is surprising that the majority of the world thus follow each other in the beaten track, like a flock of sheep, turning neither right nor left, and admiring by rote all they are told to admire, totally regardless of the beauty that lies beside them unvisited, and which would more than repay the compliment of inspection. The beauty of this river, which joins the Rhine at Coblentz, has been acknowledged by all men of taste; and the Latin poet Ausonius has sung its praises at a time when Roman princes rowed on its waters; praises which have been echoed by many other "disciples of the tuneful Nine" of more modern date. Upon these banks stood the Belgian Rome, the parent of modern Treves; and here resided some of the later emperors of this all conquering people; while the immense number of Roman coins still existing, which were struck at this city, as well as the magnificent remains of buildings erected by this people, shew the great importance of the place during their dynasty. The situation of the city is most lovely, in a plain surrounded by vine covered hills, the river washing its walls; and the opposite banks, grand in an assemblage of wood and rock of the most picturesque and varied beauty. The hills on either side were dedicated by the Romans to Apollo and Mars. "Thus unto a situation peculiarly lovely they associated the most powerful influence their religion could afford; and we need not wonder if, so placed, so founded, and so protected, the rising city should soon attain to a very unusual prosperity. The importance of Treves, as long as the Roman empire flourished, is abundantly testified by numerous facts; by none more decisively than that she was repeatedly honoured with the presence of the master of the world. Many also, and high sounding, are the epithets bestowed upon her by the writers of that nation. She is designated in their works as the richest, the most distinguished, the most glorious, and the greatest, of the towns on that side of the Alps."

Thus writes Professor Wyttenbach, as translated in Dawson Turner's "Guide to the Roman Antiquities of Treves." After lamenting "how the rude hand of the spoiler, and mouldering touch of time, have destroyed what care, and art, and industry, had reared," he adds, "gone, utterly gone, are the Capitol of ancient Treves, and that senate-house, which, still venerable and massy in its ruins, excited the wonder of Venantius Fortunatus in the 6th century. No traces are to be found of our circus, said to have vied with that of Rome, nor of our imperial palaces. The triumphal arches of Valentinian and Gratian, the Forum, the Thermæ, and the Aqueducts, as likewise the temples and basilicæ, rich in statues and frescoes, have equally disappeared; and it is by tradition alone that we are assured of the existence of that splendid entrance near the Moselle, entitled the *Porta inclyta*, which, studded with golden stars, served likewise as a lighthouse. Neither do these, considerable though they be, constitute the total of our losses; many other noble works of art have

RAILWAYS IN THE PAPAL STATES.

In a notification lately issued by Cardinal Gizzi, secretary of state, the Pope authorizes the execution of the lines of railway undermentioned:—1. That from Rome through the *Valle del Sacco*, to the Neapolitan confine near Ceprano. 2. That joining Rome with the port of Anzio. 3. One from Rome to Civita Vecchia. 4. That from Rome to Bologna, by way of Ancona, which passes through the most populous parts of Umbria, as Foligno and the valley of the river Potenza, and follows in part the traces of the Via Flaminia Emilia. —The conditions on which these lines shall be assigned to the companies, represented by pontifical subjects, after approval, are, the presentation of:— 1st. The description of the lines contemplated. 2. "Artistic and economic information" which they may be able to give in regard to these lines. 3. The statement of the time in which they propose to complete the studies, and the works, if approved of, and of the time for which they demand the enjoyment of the concession after the completion of the works. 4. The security they propose to give in favour of the proprietors of the lands, and the security to the Government, before the works are undertaken, that they shall be completed. 5th. The exposition of the means by which they propose to conduct the undertaking. The interests of the pontifical subjects being considered, both as regards capital and work.—Three months are granted for presenting the projects, with these conditions, which time may be extended on proper representation.—The Government also notifies that the construction of these lines being secured, it will take into consideration the line from Foligno to Perugia, and Citta di Castello, through the *Valle del Tevere*, and others, whose utility may be perceived; and it further offers a gold medal of the value of 1,000 scudi, to whomsoever may indicate the best mode of passage between Umbria and the *Marche*.—This resolution of the Papal Government, holding out, as it does, the prospect of many other "judicial reforms, and economic ameliorations," in the words of the notification—will have a most important and invigorating influence upon the prosperity of the Roman states, and the effects of the enlightened policy of the present Pope will reach, through the still active agency of the Roman Catholic Church, far beyond the mere confines of Italy. —We trust, that a hint, given in the programme of conditions, may warrant us in assuming that some arrangements will be made for the careful preservation of all works of art which the works will approach, or which may be discovered during their execution.—The *Roman Advertiser*, the English newspaper published in Rome, still continues to give much interesting information to residents, and those who have visited "the eternal city," and may, we perceive, now be seen in London.

RAILWAY JOTTINGS.

The invention of a railway speed-register, or regulator, has been already cursorily noticed in *The Builder*, but no account of its mechanism has appeared till now that it has been called for and constructed for use on the East-Indian Railway, for the guidance of the servants, chiefly native, on that line; a circumstance likely to lead to its general adoption at home as well as abroad, as it provides for a want continually experienced, and hitherto inadequately supplied by tabular forms. It consists of a dial of about five feet in diameter, upon the upper half of which is a series of numbers, showing the distances of each station along the line, the number of hours occupied by every train in both directions between each station, and the several stations and stopping-places between the extreme termini. In the centre is a clock dial, by which the departure and arrival of every description of train can be ascertained at a glance. The several trains are indicated by elongated hands, which are worked by a movement constructed according to the speeds required, and attached to the works of the clock. In the railway regulator the goods' train travels at the rate of 12½, the passenger train at 25, and the express train at 50 miles an hour. The trunk line movements are all indicated upon the outer circle; and the branches are provided for by a similar division of the dial, nearer the centre, by which means additional branches can at any time be introduced, and put in motion when required, without inconvenience, expense, or derangement of the original machine.——The saving of expense in the transit, by railway, of the yearly supply of 150,000 head of cattle, and 1,500,000 sheep, to the metropolitan market, is estimated at no less than 675,000*l.*; and considering that the trouble and expense of conveying live cattle and sheep are much greater than those of the mere dead-weight, from which, moreover, a heavy surplus of waste, garbage, &c., would be further deducted; the saving might be greatly increased by the transmission of the so far ready-prepared article instead of the live, as well as raw, material, with all its intolerable annoyances, both metropolitan and provincial.——The rate-payers and residents of Regent's-park and its vicinity have memorialized the Marylebone vestry against the Regent's Canal Railway scheme, as likely to deteriorate the property and destroy the retirement of the neighbourhood, as well as to stop the equestrian, and take away the security of the pedestrian, exercise in the park.——A brisk trade in coals, to be unshipped at Blackwall in order to avoid the heavy London port dues, and transmitted along the Blackwall and Stratford lines to Stamford, Cambridge, &c., is anticipated since the announcement of the Eastern Counties Company's intention to carry coals along their line. From Lynn, too, by way of Ely, an additional supply is looked for. Yorkshire coals are thus expected to be had at Cambridge for 17s. to 18s. a ton, and even Newcastle for 21s. to 22s,—less, in fact, than in the metropolis, though to be thus further carried through the Eastern Counties to their ultimate market.——The South-Eastern Company design to form an immense locomotive establishment at Ashford, where the following and other buildings comprise but one-half of the works intended to be carried out simultaneously with their new lines. The works alluded to consist of a large engine shed, a repairing shop, smiths' and boiler shops, and tender shed. The engine shed, which is for sixteen locomotives, with tenders, is 208 feet 9 inches, by 63 feet. Four lines of rail extend the whole length of the building. The repairing shop has room for fifteen engines and tenders, length 395 feet by 45. Attached is to be a stationary engine of twenty-five horse power, for driving the works. A transverse crane, to move on rails, along this shop, will lift twenty tons at its centre. The smithy, which will contain twenty fires, is 176 feet long by 45 wide, and 28 high.——A bridge at Timsbury, over the Salisbury and Bishopstoke branch line has just fallen in.——The Shiffnall contract on the Shrewsbury and Birmingham line has been let to Mr. M'Leod of Gloucester.——Arrangements are in progress for the erection of the central station at Chester on an extensive scale, and at an estimated cost of 80,000*l.* A new and improved approach to the city is also projected.——In a late newspaper paragraph, it was announced, that a contract for works between Peterborough and London, on the London and York line, had been let to Mr. Brassey at 120,000*l.*, whereas Mr. Brassy's tender, which was for 75 miles, or the whole distance from Peterborough to London, was, in fact, 120,000*l.* below the next lowest bidder.——Contracts for 35,000 tons of rails for the London and York have been taken by the two firms of Bailey Brothers and the Colebrook Dale Company, but chiefly the former, at or about 10*l.* delivered; the rails to be only 72lb. ones. Sir John Guest and others declined, it is said; not liking the conditions, one of which, as reported, is, that if, within twelve months after the rails are laid down, the engineer disapprove of them, he may order the contractor to take them back, without any appeal from his decision. ——At Middlesborough, an extensive market-house and new town-hall were lately opened. We have already repeatedly noticed this striking manifestation of the creative power of railways (*inter alia*, see vol. iv., pp. 137, 316). The thriving town which has here so rapidly sprung up, besides its spacious docks and coal drops, and its excellent port, accessible at all times, its custom-house and ship-building yards, its church and chapels, has now several schools, a mechanics' institution, news' room, branch bank, various manufactories, three iron-foundries, and extensive rolling mill for bar-iron, &c. &c., and has for some years been lighted with gas. In business it now so far outvies the port of Stockton, of which it may be said to be an off-shoot, that while in 1844 and 1845 the shipments of coals at Stockton were respectively 22,644 and 21,170 chaldrons, those at Middlesborough were 137,885, and 195,796 chaldrons. By one establishment at Middlesborough, it is said that 70,000 chaldrons of Brancepeth coke were shipped to Railway and Iron-foundry Companies and others, throughout the three Kingdoms.——The North British Line is said to be on the eve of passing into Mr. Hudson's hands on a guarantee of 8 per cent. with half profits.——On the Dublin and Kingstown Line, second class carriages are henceforth to be lighted at night, along with the first class. ——The Board of Control and the Directors of the East-India Company have at length decided upon giving their sanction to the introduction of railway communication into British India on the following conditions:— The Direct Trunk, or East-India Line, is to be adopted; the Government guaranteeing four per cent. to the shareholders. The amount guaranteed is fixed at 3,000,000*l.* to commence with: the guarantee to extend over fifteen years: Government to have the privilege of purchasing the railway after thirty years from the date of its completion, at the then fair market value of the property: the company to be incorporated by an act of the Legislative Council as well as by charter.——The preparatory works for the railway from Rome to the frontier of Naples and Civita-Vecchia have already commenced.——The French Minister of Public Works has just nominated a commission to report on the experiments commenced on the Sceaux Railway, constructed after a system of curves of small radius and worked by articulated carriages. The commission is also to report on the proceedings of the atmospheric railway established from Nanterre to St. Germain.—— The Dieppe Railway Tunnel has been bored (length 2,400 metres), and the mason-work begun; the engineer, Mr. Newton, having placed the first bricks in presence of Mr. Smith, the Company's agent, and the workmen.—— The virtual power of levelling the hills with the filled-up valleys, by piercing through the bowels of them, as in tunnelling operations, is likely, it appears, to receive a mighty accession of force from the operative aid of machinery, experiments with which, according to the *Moniteur Belge*, have been already made, in order to test the power of penetrating the Alps through the great projected tunnel about to be commenced on one of the Italian lines. "The machine was placed in front of the web, and effected a bore to the depth of eighteen centimetres in thirty-five minutes. At this rate the new invention will complete upwards of five metres of bore per day, and the proposed tunnel through Mount Cenis will be finished in the space of three years. The experiments have been repeated twice before several of the first engineers of France, and with the most complete success."

ELECTRO-TELEGRAPHIC PROGRESS.

The electric telegraph on the Midland Railway was opened for public use on Friday week, so that communication may now be made between Leeds, Normanton, Masborough, Sheffield, Chesterfield, Derby, Leicester, Rugby, Burton, Tamworth, Birmingham, Nottingham, Newark, and Lincoln, at the following rates per mile, namely:—Under ten words, 1d.; above ten, and under twenty, 1½d.; above twenty, and under thirty, 3d.; and for every additional ten words, one halfpenny per mile. A messenger, if required, may be dispatched from any of the above stations, on foot, at 1s. per mile; or if by postchaise, on a reasonable remuneration. In case of any message failing through the defect of the instrument, or neglect of the company's servants, the money will be returned. Messages relating to luggage lost or mislaid by the company's servants, are to be sent free of charge. ——By the way, the electric telegraph, like every good thing, is occasionally turned to evil account, as well as to good. We do not at present allude to the merely business qualifications of this winged Mercury, or swift-flying messenger—and to be, ere long, enthroned divinity—of

commerce, enabling the speculating devotee, who may be first in consulting the oracle, to steal a march on his less ardent or sagacious fellow, thereby "netting 50*l.* in a quarter of an hour," by outrunning, at least, if not by overreaching, his friend. What we have more particularly in our eye at present is, the alleged existence of certain malpractices of those devotees of the commercial god—the Americans—of a kindred order, though of a slightly darker shade; more akin, indeed, to the dark than to the bright side of the two-faced patron of commerce, trickery, and thieving. The malpractices complained of are said to have occurred at New York, where speculators "have managed to get the business news from England in advance of the press, and in this way have 'made great operations.' One or two more such instances of abuse," adds our authority, the *New York Correspondence*, "will effect a very good object,—forcing the telegraph, like the mail-post, into the exclusive hands of the government."

Sir,—In the new edition of Templeton's "Engineers and Contractors' Pocket Book," a mistake occurs, to which I beg to allude through your most practical columns, because it is in an article of considerable interest, on the electric telegraph, and the passage in question is likely to mislead, with regard to one of the fundamental laws of electro-magnetism.

It is stated, that "if we imagine a man to have the (electric) current transmitted through his body, the positive wire being applied to his feet, and the negative to his head, so that the current flows from his feet upwards, then a magnetic needle suspended freely before him, will place itself at right angles to his body, the north pole being to his left, and the south to his right. *If he turn half round, so as to present his back to the needle*, or if the wires be reversed, *the needle will place itself in an opposite position.*"

The first part of this latter statement (in italics) is surely incorrect. When once a needle has been deflected by an electric current in a particular direction, it will not alter its position while the current exists, unless either—1st, The direction of the current, or 2nd, The situation of the wire with respect to the needle, or 3rd, The situation of the needle with respect to the wire, be altered. Either one of these alterations would produce a variation in the needle; but the turning half round of a man, or the twisting half round of a portion of the connecting wires on its own axis, if it were made capable of such a motion, would have no effect on the needle. The man's right hand would be where his left had been, and that would be the only change.

I am, Sir, &c., A. D.

SUBJECTS FOR PRIZE ESSAYS.

Among the subjects on which the council of the Institution of Civil Engineers invite communications, for premiums, are the following:—

1. The best mode of combining materials, by arranging or cementing them together, so as to insure uniformity of action from change of temperature.
2. On the construction of retaining and wharf walls, with examples of failure and the causes.
3. The construction of piers and moles, whether solid or on arches, in a tideway.
4. The conveyance of fluids in pipes, under pressure, and the circumstances which usually affect the velocity of their currents; with accounts of water-works and gas-works.
5. The construction of girder bridges, whether of iron or timber.
6. The construction of wrought-iron roofs, for covering considerable areas.
7. The internal arrangements of the termini, and intermediate stations of railways, whether for passengers or merchandize; and whether independent of, or connected with, inland navigation.
8. The various modes of boring artesian wells, and the geological formations which have been found most productive of water.

The communications must be forwarded by the 31st of May next.

THE ANCIENT CHURCH RUINS AT DONCASTER,

DISCLOSED IN RAZING THE OLD TOWN-HALL.

The ruins of the very ancient church or chapel of St. Mary Magdalene have appeared like a shadow, and so they are likely to depart; for the very necessity under which they have come to be disentombed from the less ancient buildings in which they were embodied, in a manner compels their final demolition, in order to make way for the new buildings to be erected in their place.

The attention and interest of the Archæological Institute, however, have been engaged on behalf of their preservation; and it is to be hoped that "one of the most unique and valuable specimens of middle age architecture which this country can produce," as this has been already confidently characterized, will, by some means, or under some form or arrangement, be preserved; since, though there are abundant examples of the more decorated Anglo-Norman style to be met with, there are extant very few such specimens of the earlier character which the remains of this venerable pile appear to exhibit. The whole character of the building, indeed, as observed by a writer in the *Doncaster Chronicle*, to which, and to the *Gazette*, we are indebted for our knowledge of this interesting discovery, "is of that rude, plain, and heavy sort, relieved only by the simplest efforts to lighten and adorn, that we may with much safety conclude this sacred edifice was erected about the period when the Saxon merged into the Norman, and before the decorative work found in the arches and other parts of almost every other Norman building in this country, had come into vogue."

There have been from time to time many and divers speculations as to what portion of the ancient church of St. Mary Magdalene was contained within the site of the late municipal building; but very few suspected that in the walls themselves was entombed nearly the whole columnar arrangement of the ancient church. Such, however, is the fact; and the remains which are now disencumbered of their more modern additions, shew pretty clearly the character of the church of St. Mary Magdalene. It appears to have originally occupied a considerable area, its length outside, from east to west, being 124 feet 7 inches; the nave, 78 feet 9 inches in length, and 23 feet 4 inches in width between the columns; the length of the chancel 37 feet, but it may have extended further eastward.

There are no traces whatever of grooves or any other contrivance for the insertion of glass in the small round-headed apertures, or clerestory windows, if they may be so called, in the north wall, which, with its pillars and arches, constitutes the most entire portion of the remains. Neither, indeed, are there any such traces in other and larger openings of the same character in this, and in the north wall of the chancel, nor were there any in the demolished south wall.

Among the indications of past customs brought to light in this long-buried pile, are several patches of painted plaster work on the wall of the chancel. These show that the interior of this part of the building was covered with a thin coating of white plaster, and this afterwards marked out with black lines into a sort of ashlar work. On the centre of every alternate stone in this is a sort of cinque-foil, rudely painted in red, with a curved line or stalk of the same colour, coiling round the flower. On the other stones there have been some red and black characters, but these are quite defaced. Over the arch separating the nave from the chancel, and on the west side, are also some characters, or scroll work, painted in shades of dirty red and white.

It is now quite evident that there has been no tower or steeple attached to this building, unless, as is very probable, the west end wall of the chancel supported a small bell turret. The north and south walls of the nave are 3 feet thick; the west end wall 3 feet 3 in.

It is a somewhat singular circumstance, that there is not the slightest trace of a foundation having been laid for this massive structure. The huge walls and massive columns have been built upon the bare surface of the ground; and the level of the original floor of the church would correspond very nearly with that of the depressed portion of the Magdalene's, near the south-west corner of the Town Hall.

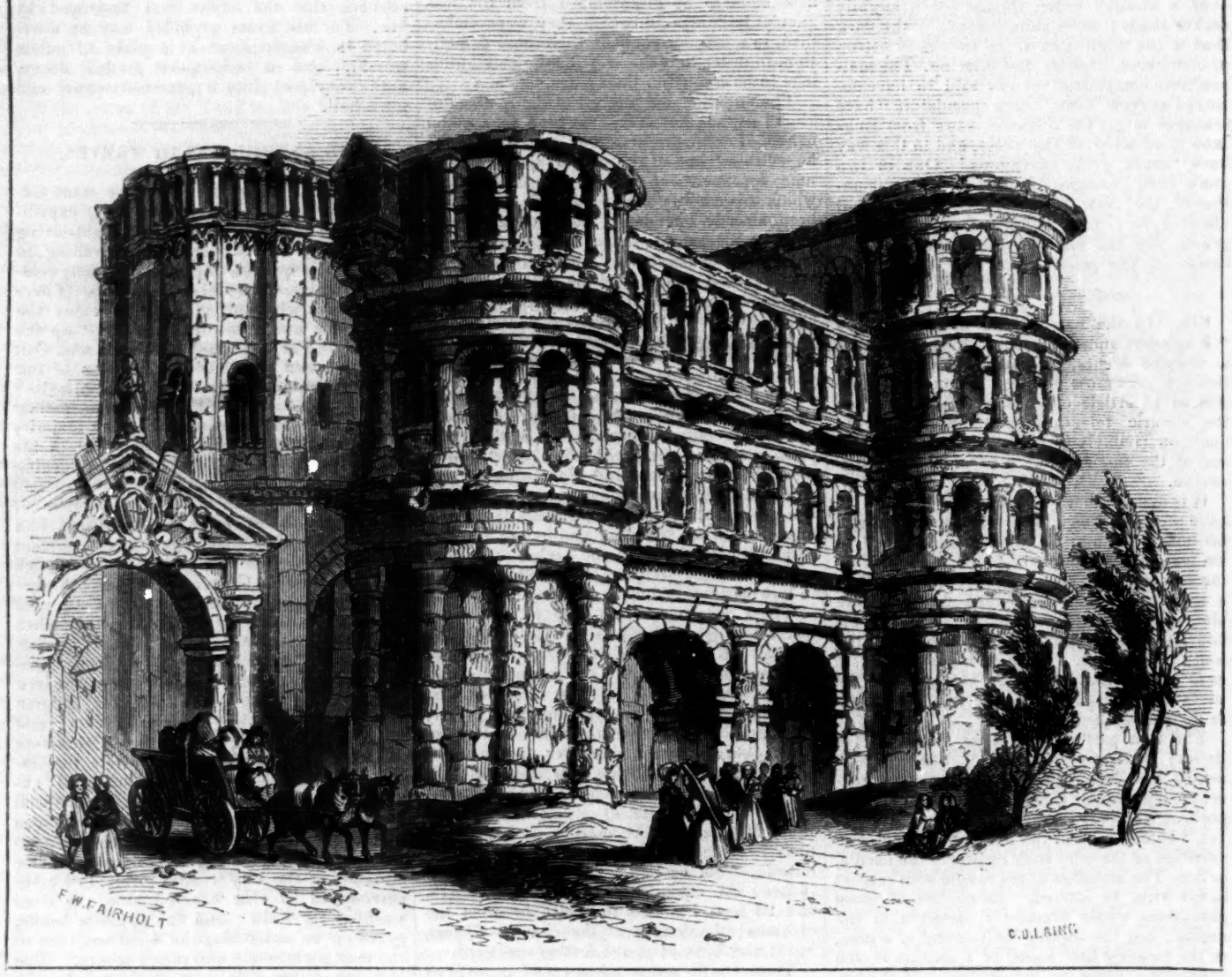
From the decayed state of the columns and other parts of the nave, it is clearly evident that the church or chapel of St. Mary Magdalene stood for many years, perhaps centuries, a ruin. It would also seem, from the traces of fire left on much of the stone-work in the lower part of the building, and especially the chancel, that the edifice was destroyed by fire. To this cause, probably, may be attributed its abandonment as a place of public worship, and its subsequent gradual decay, until converted into a grammar-school and town-hall.

THE ANTIQUITIES OF TREVES.

Railways and steam-boats have made travelling on the continent so very easy, expeditious, and inexpensive, that the sight-loving English may be seen every where, rivalling, in their erratic courses, the almost equally celebrated ramblers, the German students. There is one track where all go alike to enjoy the picturesque and romantic, and this "up the Rhine." For the many thousands who visit this far-famed river, how many tens of our countrymen have made a tour up the Moselle? It is comparatively unknown even among artists; and it is surprising that the majority of the world thus follow each other in the beaten track, like a flock of sheep, turning neither right nor left, and admiring by rote all they are told to admire, totally regardless of the beauty that lies beside them unvisited, and which would more than repay the compliment of inspection. The beauty of this river, which joins the Rhine at Coblentz, has been acknowledged by all men of taste; and the Latin poet Ausonius has sung its praises at a time when Roman princes rowed on its waters; praises which have been echoed by many other "disciples of the tuneful Nine" of more modern date. Upon these banks stood the Belgian Rome, the parent of modern Treves; and here resided some of the later emperors of this all conquering people; while the immense number of Roman coins still existing, which were struck at this city, as well as the magnificent remains of buildings erected by this people, shew the great importance of the place during their dynasty. The situation of the city is most lovely, in a plain surrounded by vine covered hills, the river washing its walls; and the opposite banks, grand in an assemblage of wood and rock of the most picturesque and varied beauty. The hills on either side were dedicated by the Romans to Apollo and Mars. "Thus unto a situation peculiarly lovely they associated the most powerful influence their religion could afford; and we need not wonder if, so placed, so founded, and so protected, the rising city should soon attain to a very unusual prosperity. The importance of Treves, as long as the Roman empire flourished, is abundantly testified by numerous facts; by none more decisively than that she was repeatedly honoured with the presence of the master of the world. Many also, and high sounding, are the epithets bestowed upon her by the writers of that nation. She is designated in their works as the richest, the most distinguished, the most glorious, and the greatest, of the towns on that side of the Alps."

Thus writes Professor Wyttenbach, as translated in Dawson Turner's "Guide to the Roman Antiquities of Treves." After lamenting "how the rude hand of the spoiler, and mouldering touch of time, have destroyed what care, and art, and industry, had reared," he adds, "gone, utterly gone, are the Capitol of ancient Treves, and that senate-house, which, still venerable and massy in its ruins, excited the wonder of Venantius Fortunatus in the 6th century. No traces are to be found of our circus, said to have vied with that of Rome, nor of our imperial palaces. The triumphal arches of Valentinian and Gratian, the Forum, the Thermæ, and the Aqueducts, as likewise the temples and basilicæ, rich in statues and frescoes, have equally disappeared; and it is by tradition alone that we are assured of the existence of that splendid entrance near the Moselle, entitled the *Porta inclyta*, which, studded with golden stars, served likewise as a lighthouse. Neither do these, considerable though they be, constitute the total of our losses; many other noble works of art have

ROMAN GATEWAY AT TREVES.



likewise vanished, but still all is not taken from us. To adorn our valley, and to attract the attention of the inquisitive and cultivated traveller, there yet remain, albeit in a more or less injured state, so many objects curious in art and pregnant with historical recollections, that Treves is secure of always exciting the most lively interest, and indeed may, in this respect, safely claim a superiority over every other city in Germany."

It is to these existing remains of past greatness we must now direct the attention of our readers; and among them all, there is none more important and interesting than the ancient gate, perhaps the most perfect Roman work of that kind at present in existence, and which is known as the Porta Martis or Porta Nigra. It is engraved here from a sketch made but three months since, and is a faithful transcript of its present state. There are few buildings more commanding than this grand old structure, and which is represented upon some of the coins of Constantine struck in this city. It is of colossal dimensions, and magnificent proportion; its breadth is 115 feet, and the highest tower from the basement to the summit measures 70 feet. The construction throughout is equally colossal. It is built of enormous blocks of sandstone, averaging from 4 and 5 feet in length; but some measure 8 or 9 feet, while their depth varies from 2 to 3 feet. "So skilfully are they joined together without mortar or cement of any kind, that they appear to be supported by their own weight alone."—*Wyttenbach*. The barbaric conquerors of the Romans when they obtained possession of Treves, imagined a different construction was adopted, and believing that metal clamps rivetted each stone, they proceeded to obtain them if possible, to convert into other uses, and in every direction have they bored in the interstices of the stones for this much desired end. The Colosseum, at Rome, exhibits similar ravages, which have a most injurious effect on these buildings, and give a very shattered and ruinous look to them in many parts.*

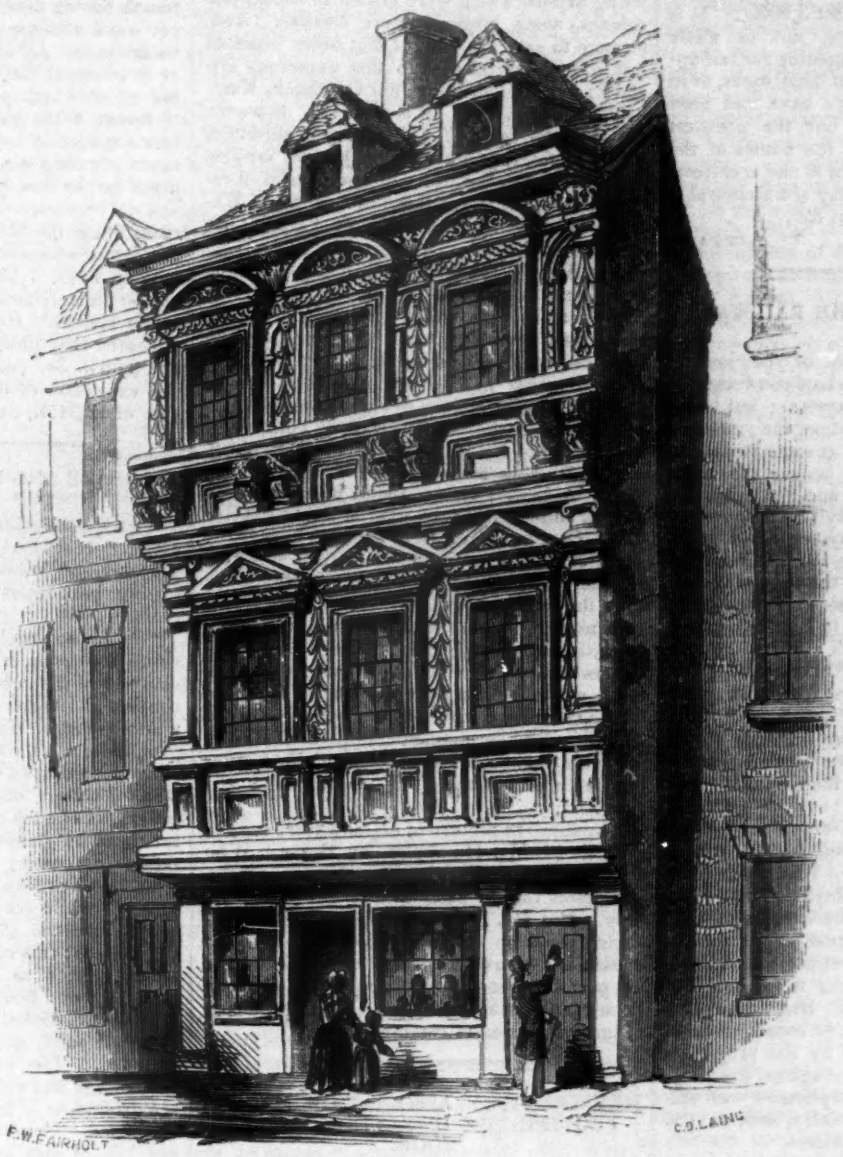
Two arched gates, each 14 feet wide, formed the entrance through the Porta Martis to the Belgian Rome in its palmy days. The height of the arch is at present little more than 12 feet; but the soil has so accumulated here, that it is conjectured they were originally "at least 5 foot higher." The voussoirs of the arch continue through the string course above. At the sides, the grooved channels would lead to the supposition that some contrivance similar to a portcullis was used to fasten these entrances on the side next the country, where extra protection became requisite.

"In every direction, and as well on the ground-floor as on the upper stories, the face of the building is ornamented with rows of Tuscan columns. These in the two fronts stand out from the wall full two-thirds of their diameter: on the sides they are no more than pilasters; and their projection does not exceed 3 inches. Their form is plain and simple, and thus the better adapted to harmonize with the dimensions and solidity of the whole."—*Wyttenback*. The centre of the gate is composed of two uniform stories, the side towers of three; the third story of one, is, however, ruined. Towards the town these wings exhibit a flat line, and project about 4 feet; on the country side, the principal front, and which is represented in our engraving, they come forward in semicircles just 15 feet in advance of the centre.

Wyttenbach considers this colossal structure the Propylæum, or more probably the Pretorian, gate of the fortifications wherewith Constantine the Great environed Treves, and that it shows marks of the work of different eras; for even at the close of the western empire, when it was brought to its present state, it was not regarded as altogether complete. Some additions were still considered necessary to give the last touch to its size, its strength, or its beauty. The fall of the Roman empire stayed the progress of this work; the barbarians spoiled it, in the hope of finding metal; and later barbarians converted it into a church, disfiguring it in many parts. It has indeed seen strange vicissitudes since its erection as a gate, and its modern return to its old uses; for it was not always sacred to its original destination. A certain St. Simeon, sometimes called *Stylites*, from his great propensity to living abstracted from the world, on the summit of columns, chose this gate for his residence, and resided on its highest tower during the last seven years of his life, from 1028 to 1035. His history may be seen in the early part of Hone's Every Day Book, and is a frightful instance of what passed for religious devotion in the middle ages. After voluntary tortures

* "The characters that are to be seen in great variety upon the stones, may possibly be *masonic marks*. They resemble those frequently found on grave-stones of the 4th century, in which the letters have the appearance of belonging to the earliest period of the Romans. Specimens of these are given in the work of the Benedictine Monk, Joseph Fuchs (see his *Alte Geschichte von Mainz* ii., p. 169), and in that of Quednow (*Beschreifung der Alterthümer in Trier*, p. 54)."—Turner's translation of Wyttenbach, to which excellent *guide*, we must acknowledge once for all our obligations for facts and dates connected with the interesting objects it descants on.

OLD HOUSE IN GLOUCESTER.



of a repulsive kind, he died, and was canonized by Pope Benedict IX., and the Roman gate on which he last appeared became converted into a Christian church, in which he was buried. To effect this, earth was piled up before either gate, to a level with the first stage of the building, over which was constructed a flight of steps leading to this story; the interior of the gate thus formed the body of the church, which was dedicated to St. Simeon, the lower part or gateway forming a crypt. An apse was built on one side, and incorporated with the Roman building; and this venerable and ornamental relic of the 12th century still remains, as will be seen in the engraving: it was found unsafe to remove it, as it aided in strengthening the more ancient building. Thus the Pagan gate became a Christian church until the first French revolution, when the gateway, having lain for nearly 800 years blocked up, was again restored to its original use, as a gate to the town, which the erection beside it, also seen in the sketch, had usurped, and which was placed there in the 17th century. The traces of church decoration still remain on its interior walls, and it is devoted to a collection of Roman ruins, found in the city and neighbourhood.*

METAL BOATS.—It is proposed to cast vessels in one mass, and a composition has been invented, combining the advantages of copper and iron.

* We venture to direct attention to our engraving, the drawing for which was made on the spot by Mr. Fairholt expressly for us.

OLD HOUSE IN GLOUCESTER.

The accompanying engraving represents a curious specimen of wooden construction, in the ancient city of Gloucester, and will aid in completing the series illustrative of domestic architecture, already carried to a considerable extent in previous numbers of our journal.

STAINED GLASS AT HAMPTON COURT.

WOLSEY'S HALL is adorned with thirteen new stained-glass windows, and is now open to the public. Each of the windows is 20 feet high and of considerable width. They contain the armorial pedigrees of the six wives of the monster King Henry VIII. Curiously enough they all trace their descent from Edward I. of England. Good subjects as the arms may be for stained glass, we should have hesitated before emblazoning crimes which disgrace the pages of our history. We shall pay an early visit to the hall, and have no doubt we shall find the windows worthy of the established reputation of Mr. Willement, by whom they are executed.

A morning contemporary, after describing these windows, says:—

"We have been thus far minute in our description of the new embellishments at Hampton-court Palace, from a desire to see the highest artistic talent in the country finding honourable and lucrative employment in the pursuit of a long-neglected branch of the fine arts. When we remember the cold and cheerless aspect of most of our cathedrals and ecclesiastical edifices, from the absence of those stained-glass windows, which at once ministered to the religious sentiment, and infused a sense of bodily warmth and comfort, we shall perceive how wide a field is open to men of science, and painters of genius, who may endeavour to perfectionate this branch of high and devotional art. The Government are making a wise and enlightened exercise of their patronage, in doing what they can to stimulate and encourage the art of staining in glass; and as the English school of painters is acknowledged to excel all other existing schools in colouring, there seems no reason why our church and cathedral stained-glass windows should not, if possible, excel the *chefs d'œuvres* of the modern Munich artists."

COMPETITION DESIGNS FOR DALSTON LITERARY INSTITUTION.

SIR,—Some few months since designs for the above-named institution were advertised for in THE BUILDER; I obtained the particulars (which I inclose you), wherein you will see that *one of the instructions to architects, limits the amount to be expended to* 1,500*l.* I submitted a design, keeping as near as possible to that sum, and was one of the unsuccessful competitors. A design by Mr. Catlin was chosen, and in your last publication is an advertisement to builders for estimates for *the carcass* only. I called at Mr. Catlin's office to make an estimate for a builder, when I was told the quantities were being made out, and that in all probability there would be about 90 rods of brickwork, and 90 loads of timber. Putting the brickwork at 11*l.* per rod, and the

timber at 7*l.* per load, including sawing, these two items alone would amount to 1,620*l.*, being 120*l.* more than was intended to be expended upon the whole building. Is this fair or honourable on the part of the committee, naming a certain sum, and then selecting a design which will cost at least 3,000*l.*? It is another lesson to architects, not to waste their time and talents in competing for self-appointed committees, when in most cases, as in the present, the instructions have not been taken the least notice of, but the prettiest picture chosen. Ought not the names of the committee to be made known to the architects in all cases, to prove that they are honourable men? I am, Sir, &c.,

5th Jan. 1847. ALPHA.

THE FOUNDER OF THE RAILWAY SYSTEM.

SIR,—In the 188th number of your journal you allude to Thomas Gray, whom you designate the founder of the railway system; but being very much disposed to question the justice of your remarks, I have been at some trouble to investigate the matter, and believe the merit of its introduction is due to another party.

On perusing Thomas Gray's "Observations on a General Iron Railway, or Land Steam Conveyance," published in 1825, I find that in 1822 he sent petitions to the then ministers of state, in which an allusion is made to a former petition he had sent to Lord Sidmouth in 1821, while, as you will observe by the annexed letter, an act of Parliament was actually obtained for the first iron railway for general purposes in 1820.*

Thomas Gray sent similar petitions to his Majesty's ministers and to the Board of Agriculture in 1823, and also to the corporation of the city of London in 1824.

In the year 1822 the Liverpool and Manchester Railway was first projected, the survey of which was made by Mr. Wm. James (an intimate friend of the Mr. Baylis alluded to in the subjoined letter). In the autumn of that year he witnessed the success attending the Stratford-on-Avon and Moreton-in-the-Marsh Railway, which induced him to project the Liverpool and Manchester. But the scheme was abandoned for a time, in consequence of the opposition shewn to it by the projectors of the inland navigation throughout the kingdom; and in 1824 Mr. Stephenson was employed to re-survey the country, and, as the sequel proved, with better success.

I am, Sir, &c.

Chester, Dec. 21. B. B.

*** This does not interfere with the claim made for Mr. Gray. It is not assumed that he first projected a railway. Railways of wood have been used to facilitate the transport of coals and metals from a very early period, and even an iron railway was employed for that purpose at Coalbrookdale as early as 1767. Moreover, *steam power* was applied on the Stockton and Darlington Railway in 1805. Nevertheless, it was left for Thomas Gray to foresee the general applicability of railway travelling, arrange a system, and urge resolutely the importance of adopting it, long before the public were prepared to admit the truth of his views.

FIRE-ENGINES KEPT ON THE PREMISES.—A correspondent of the *Daily News* suggests, that in premises where steam-engines are used, an excellent provision might be made against fire by making screw joints to the water-pipes which convey water to the boiler, so as to fit the hose of a fire-engine. By this means a body of water might be readily thrown into the building, and in great quantities.

* To the Editor of *The Birmingham Journal*.

THE ORIGINATOR OF RAILWAYS.—Sir,—I beg to put your correspondent "E. B." right upon this much disputed point. The late Mr. James was *not* the "originator of railways;" he was *not* the projector of the Stratford and Moreton Railway; neither was he a Birmingham man. By reference to the act obtained in 1820 for the construction of the above railway, the first designed for general purposes, it will appear that Messrs. Hunt, Bellamy, and Bannister were solicitors to the bill, and the late Mr. Baylis was the engineer, who *was* a native of Birmingham. Mr. James was at that time deeply interested in mineral and *canal* property, and *opposed* to the introduction of railways; but several years subsequent to that period he certainly projected the Liverpool and Manchester Railway, but it is ridiculous to claim for Mr. James the priority.

Stourbridge. G. F. B.

BERLIN ACADEMY OF FINE ARTS EXHIBITION.

PORTRAIT OF HUMBOLDT.

THE late exhibition in the Prussian capital comprised nearly nineteen hundred works of living artists, which were placed in *twenty-five saloons*, some larger, others smaller. And, strange to say, the men of first order chanced not to have contributed to this numerous art-show; neither Cornelius, nor Overbeck, Kaulbach, Lessing, etc. We perceive, however, that for the sake of a legitimate emulation, works *of foreign* (not Prussian) artists are also received within the walls of the Berlin Academy, amongst which those of Schorn, of Munich, H. Vernet, and Rahl of Vienna, are most conspicuous.

But besides the many art-lamentations and complaints uttered in this country, those of the Germans also, which became audible on the present occasion, will be interesting and instructive. It is said there, that "*art has in Germany only patrons or opponents—but no public.*" A consequence of these untoward circumstances is the fading away of entire art-schools; like, for instance, that of Düsseldorff, where Lessing alone shines as a remaining light. A *healthy* vigour seems wanting everywhere, and whether we look at King Saul or Lear, Canute or Gottfried, they are always the same smooth countenances, content-void (*inhaltsleer*). It appears from all these pictures, that the painters had never perceived either true monarchs or true saints, be it in reality or with their fancy's eyes. There they are—figures without either bone or muscle, *doughy* flesh, sweet-mellow features without marrow. These German critics praise *French* painters, and amongst the pictures exhibited at Berlin, Vernet's "Editha recognising Harold after the Battle of Hastings," is placed in the first rank.

The admired picture of *all*, however, was the portrait of Mr. Humboldt, by Bezas. Who that has ever seen the great German *savant*, will know that to paint him is any thing but easy. But Mr. Bezas has succeeded in rendering the deep searcher, philosopher, diplomatist, and man of the world, and to impart to his portrait that penetrativeness, vast intellect, benevolence, eloquence, and versatility, which Humboldt possesses combined.

METROPOLITAN ASSOCIATION FOR IMPROVING THE DWELLINGS OF THE POOR.

At the first annual meeting of this association, held on the 24th ult., a report was read, which, after mentioning that a royal charter had been granted to the association, went on to state that an agreement for a lease for ninety-nine years, at a rental of 90*l.* per annum, had been entered into with the Brewers' Company, for a piece of ground opposite to the church in the Old Pancras-road, leading from King's-cross to Camden Town, which was considered well suited to the purpose, being situate in the immediate neighbourhood of a crowded district, and on a healthy and well-drained site. The object of the erections was to ensure to each family the greatest amount of accommodation at the lowest practicable expense. The rooms were to be so contrived that an ample quantity of light would be secured to each, while every set would be perfect and independent of others. Each dwelling was to be supplied with water at the rate of forty gallons per day, and with a sink, and the means of carrying off refuse and ashes through a shaft accessible from the scullery. The first building which the association purposed to erect, would consist of twenty-one sets of two rooms, and ninety sets of three rooms, of various sizes, each having the above conveniences attached; thus furnishing dwellings proportioned to the requirements of different families, and to their means of payment. In cases where there were two bed-rooms, each would have a separate entrance from the sitting-room, and the larger bed-rooms a fire-place. Under the slate sink in each scullery would be a galvanized coal-box; there would also be a meat-safe fixed against the external wall. The living rooms would be furnished with a range, boiler, and oven, and the shutters in the ground-floor rooms, so contrived as to form a table during the day. The committee of works had carefully examined all the systems and plans that had been suggested for ventilation, but they regretted to state that no plan had come under their consideration which appeared to them sufficiently secure from the danger of failure to warrant their adoption of it! According to the present mode of assessment, each set of rooms having four windows was liable to 7¾d. per week window duty, while a similar set of rooms in the Albany, or in the inns of court, or in either of the universities, was liable to a tax of only 1¾d. per set—a special exemption in favour of the wealthier classes. The directors confidently hoped that an alteration in the mode of rating would shortly be effected. The plans for the new buildings were now complete, and only awaited the official seal of the authorities under the Metropolitan Buildings Act for the commencement of the works. Since September, 1841, 1,155 shares had been allotted, almost entirely among the wealthy and aristocratic classes. By the financial statement it appeared that 7,963*l.* 10s. had been received, and 2,094*l.* 3s. 7d. expended. A contract for the execution of the proposed works, for the sum of 12,345*l.*, has been entered into.

TO GLAZE AND ENAMEL THE SURFACES OF CAST IRON.

THE specification of a patent for coating and glazing cast iron, recently granted to Mr. Kenrick, of West Bromwich, gives the following particulars, which may interest our readers:—

"After the article of cast iron has been thoroughly cleaned, it will be ready to receive the coatings of the compositions, the first of which consists of 100 lbs. of calcined flints, ground to a fine powder, mixed with 75 lbs. of borax, ground fine. This mixture is then fused, and, when cooled, take 40 lbs. thereof, and add to it 5 lbs. of potters' clay; then grind them well in water, till of such a consistency that when the article to be glazed is dipped into it, it will retain a coating of about 1-16th of an inch in thickness. This is then allowed to set, and, while yet moist, the neat composition to produce the glaze is carefully sifted over the surface; this consists of 100 lbs. of Cornish stone, ground to a fine powder, 117 lbs. of borax, ground fine, 35 lbs. of soda ash, 35 lbs. of saltpetre, 35 lbs. of sifted slaked lime, 13 lbs. of white sand, and 50 lbs. of white glass, well pounded. The whole of these materials are then mixed and well vitrified; when cool, they are ground to a fine powder, which is washed and dried. Then take 45 lbs. thereof, to which add 1 lb. of soda ash, and mix the same in hot water; this is to be well stirred, and allowed to dry in a stove, when a fine powder will be produced, which, being evenly sifted over the surface of the yet moist former coating, the article is placed in a stove, and kept at a temperature of 212 deg. Fahr., for the purpose of drying the composition; it is then fired by being placed in a kiln or muffle, raised to a heat sufficient to fuze the glaze, which may then be removed and examined; and should it be found that the glazing is not perfect, the mixture is sifted over it, and it is again subjected to the action of the kiln or muffle."

In coating the interior of iron pipes, the composition is shaken through them, and the powder afterwards passed through in the same way. The patentee proposes to apply it to the surfaces of cast-iron ornaments also.

TO SET OUT A SQUARE ANGLE WITH THE TAPE ALONE.

A Country Carpenter asks "if he has a tape measure in his pocket, but no set square with him, what is the simplest method of setting out a square angle, which can be proved mathematically true, and be easily remembered."

Make a triangle with the tape, the sides of which are either 3, 4, and 5 feet each, or any other numbers in the same proportion, as 6, 8, and 10, or 15, 20, and 25. The angle between the 2 lesser sides is a square angle. So that, if the end of the ring and the 12 feet mark are held together, and two pegs stuck in, one at the 3 and the other at the 7 feet mark, straining the tape tight, the angle at the 3 feet mark is a true square.

Proof: $(3\,a)^2 + (4\,a)^2 = (5\,a)^2$, whatever a may be. $\therefore$ by 47th Euclid I. the angle between 3 and 4, its multiples, must be a right angle.

NOTES IN LONDON STREETS.*

Park-lane was formerly called Tyburn-lane. The large house at the south-west corner, now inhabited by her royal highness the Duchess of Gloucester, was formerly in the occupation of the Earl of Elgin. Here were first exhibited the famous marbles which will ever bear his lordship's name. Byron, in his "English Bards and Scotch Reviewers," written at a time when he felt inclined to sneer and carp at every thing, calls this house "a stone shop," and

"General mart
For all the mutilated works of art."

In the year 1816, Parliament voted the sum of 35,000*l.* for the purchase of the marbles, and they were removed from their former place of exhibition to the British Museum, where they remain fine studies, accessible to English artists; but enduring mementos of a very unworthy cupidity (?)

Piccadilly.—The house No. 133 was built by the late Duke of Queensberry for the celebrated Kitty Frederick. The first house on the right hand was, it is said, designed by George III., to whom are also attributed the designs for the Trinity House on Tower-hill, and the Office of Ordnance, which formerly stood in Margaret-street, at the east end of St. Margaret's Church, but which was demolished during the alterations completed in that part of Westminster about the year 1822. The ground behind the opposite houses, between the back of Lord Coventry's, No. 106, and the south side wall of the Earl of Chesterfield's garden, in Curzon-street, was, in 1772, an irregular space; "Mayfair-row" and "Hayhill-row" being at that time the only regular buildings. The ground upon which Hertford-street, Curzon-street, Shepherd's Market, &c., stand, was annually for many years covered with booths during the period of May Fair.

* * * * *

Shepherd's Market, still in use, was named after the ground landlord, who built and resided in that long white mansion on the north side of Curzon-street, for many years inhabited by Lady Fane, and afterwards by Lady Reade, who died in it. The surrounding ground, now so completely covered by the houses of the noble and the wealthy, was in 1750 so little esteemed, that Mr. Shepherd offered his freehold mansion, just alluded to, and gardens for the small sum of 500*l.* However, after the death of Lady Reade, this house and gardens were purchased by Lord Carhampton for about 500*l.*; and his lordship, after making considerable improvements, sold it to the present Lord Wharncliffe, then Mr. Stuart Wortley, the member for the county of York, for the sum of 12,000*l.*

The house on the left in Piccadilly was built by Novosischí for the late Earl of Barrymore, but was unfinished at his death, and remained so for many years, until it was taken as a hotel. It has been rendered memorable ever since the royal visitors, the Emperor of Russia and the late Queen of Wirtemburg, then Duchess of Oldenburg, resided in it during their stay in London. It was then kept by Escudier, and is now styled, "The Pulteney and Russian Imperial Hotel."

Half Moon-street was built in 1730, as appears by that date on the south-west corner house. Its name was taken from the Half Moon public-house, which stood at the corner. Clarges-street, originally called "Clarges-street, in Hayhill-row," was built by Sir Walter Clarges.

Few persons, from the appearance of Piccadilly front, could have been aware of the extensive premises of Bath House, standing, until the year 1821, at the south-west corner of Bolton-row. It contained upwards of fifty excellent rooms, besides numerous servants' offices and capacious cellars. The ceiling of the library was richly carved with foilage, and most splendidly gilt; its chimneypiece could not have cost less than between 600*l.* and 700*l.*; it was of the finest Carrara marble, and was profusely decorated with fruit and flowers. The foliated panels of the staircase were adorned with busts of Homer, Cicero, Seneca, &c. The mansion was taken down in 1821, and a most substantial house erected upon its site for the present Lord Ashburton, then Mr. Baring.

* Condensed from "An Antiquarian Ramble in the Streets of London." By the late John Thos. Smith, Bentley.

Whitehall.—With the male line of the Stuarts ended the glories of Whitehall. On the 10th of April, 1691, a fire broke out in the apartments formerly occupied by the Duchess of Portsmouth, which burned down all that range of buildings to the waterside, and all those over the large stone gallery. They were never rebuilt; and another conflagration, more extensive, which broke out about seven years afterwards, completed the ruin the first had began. Sir Christopher Wren had apartments in the palace in right of his office of Surveyor-General, which were burnt with the rest. Sir Christopher was very anxious in his endeavours to save the palace, and when that became hopeless, the valuable pictures and works of art which it contained.

The Horse Guards is the work of Nardy, the same architect to whom we owe the front of Earl Spencer's mansion in the Green-park.

Melbourne House, adjoining the Horse Guards, was built by Payne, the architect, for Sir Matthew Featherstonehaugh. It was for many years inhabited by General Amherst, and afterwards by Frederick, Duke of York, who exchanged it with the late Lord Melbourne for his house in Piccadilly. The Duke of York made considerable improvements in it under the superintendence of Holland, the architect, who built a new front to it, and the dome portico across the street. It is now inhabited by Lady Dover. A few yards south of it, anciently stood the gate said to have been designed by Hans Holbein for Henry VIII. (engraved by G. Vertue, and published by the Society of Antiquaries).

The offices of the Treasury are contiguous. The old grey remnant of a building which forms part of the suite is supposed to be the only remaining portion of Wolsey's original mansion of York-place. The park front that reaches to the extremity of Downing-street, with which there is communication leading to the park by a low arched passage, was built from the design of Kent, and consists of three stories of the Tuscan, Doric, and Ionic styles of architecture.

NOTES IN THE PROVINCES.

The Government works at Harwich harbour, notwithstanding the advent of winter, have been progressing uninterruptedly, both as regards the erection of the stone breakwater from the cliff, and the deepening of the channels by means of steam dredging. Mr. Williams, the contractor, has lately added a steam tug, to assist still further in forwarding the work.——Contracts for a fever hospital are to be entered into at Bedford, when the whole amount of the cost, about 2,000*l.*, has been subscribed; meantime plans and estimates are to be prepared.——At Liverpool, on Monday week, Mr. Cunningham, the architect, lectured to the Literary and Philosophical Society, on the geological conformation of the vicinity of Liverpool as regards the supply of water; from which it appears that artesian, or other subterranean borings for water, would be there a hopeless labour. The collection of surface water, over an area of 70 to 80 square miles, from the valley opposite Runcorn, was recommended, as a full supply from the Liverpool district itself was deemed impossible. The Rivington pike scheme was unfavourably regarded, on account of the adulteration of the water by dye-works, smoke, peat, &c.——The new bridge to connect Birkenhead and Seacombe has been commenced. Its gates are upwards of 70 feet wide. In the Bridge-end dock wall, 14 or 15 sluices, adjoining the great float to the river side, have been already erected. These will give a scouring power equal to that of 9,000 men, when in operation by the agency of steam. The completion of this bridge is required by the Woods and Forests previous to the docks being opened, and as part payment for the grant of land for graving docks. The opening will thus be delayed till March or April next. One of the gates to the new Bridge-end dock was lately put up.——A Cambrian Archæological Association has been established.——The inhabitants of Oldham are taking steps for the formation of parks and places of recreation, to which Government have already contributed 1,000*l.*——A correspondent of the *Manchester Courier* urges his fellow-townsmen to the good work of building a cathedral for their expectant bishop. "They have wealth, they have power, they have talents," says he, and "why not devote them to the glory of God?"——It has been determined to complete the Doncaster new town-hall by next Michaelmas sessions. Estimates have already been called for.——Of 9,000*l.*, the cost of five or six national school-houses erected at Bradford, churchmen have contributed only 639*l.*; and of 6,000*l.*, the cost of three Lancasterian school-houses also erected there, 5,000*l.* and upwards were contributed by dissenters. A contemporary suggests that the churchmen must be asleep at Bradford; but is it not far more likely that there are few churchmen there, either asleep or awake, compared with the number of dissenters? Perhaps it is the clergy of the establishment that are asleep. ——At Kendal, Mr. John Wakefield is said to have offered 500*l.* towards the erection of a vicarage-house, on condition that a like sum is added by Trinity College.——The interesting old walls of Berwick are gradually wearing away by means of frost, rain, and mischievous dilapidation. The Board of Ordnance will surely at length awake to the propriety of redeeming these distinguished relics of the olden times from ruin; a few pounds at present would suffice.——The Lord Lieutenant of Ireland has intimated to the National Art-Union of Ireland, that steps have been taken by the Government towards the establishment of schools of design in Ireland.

SOME RESULTS OF GAS LIGHTING.

In one of a course of lectures on coal gas, by Mr. Headley, before alluded to by us, the lecturer drew attention to some of the benefits which have resulted to the world from gas-lighting. He said:—The celebrated and well-known article, Mackintosh's waterproof cloth, is one. The product of the distillation or manufacture of coal into gas is naptha or coal oil; this was found by Mr. Mackintosh to possess the invaluable property of dissolving India-rubber (caoutchouc)—a desideratum that scientific men had been seeking for ages, from its great importance in the arts and manufactures; and the knowledge and use of this property has given rise not only to the rendering cloths waterproof, but to the innumerable uses to which India-rubber, in a solvent state, is now applied; and amongst other elastic contrivances to which it is applicable, we have rather a curious one, superseding the lawyer's red tape—and it may now truly be said, he ties up his papers by a "gas tape."

We have next the application of gas to lace-making. Messrs. G. F. Urling and Company took out a patent for this invention, and which has been wonderfully successful and productive. The operation is this,—instead of running the lace over a red-hot iron roller, as heretofore, it is drawn over or through a gas flame; and the superior effect desired, of entirely freeing it from the flew or flough of the thread, is attained, as the flame of the gas actually passes into the meshes of the lace, and most perfectly accomplishes the object, and in an extremely beautiful and effective manner.

Hot-blast, too, for smelting iron, may be said to be another attribute of the knowledge of gas; for its inventor, the talented J. B. Neilson, was the engineer and manager of the Glasgow Gas-works; and, in that capacity, made, in conjunction with the late Mr. Mackintosh, a great number of experiments—not only with reference to his water-proofing, but also to carbonising iron, by means of gas tar, and thus converting it into steel; and there can be little doubt, that during some of these experiments, the idea was created of applying heated air to the making and smelting of iron, now of such vast importance and consequence to the country. There are other applications, too, of gas—such as motive power to a steam-engine, patented by Mr. Brown—and the practical acquaintance with it has led even to the introduction of the atmospheric railway—Pinkus and Clegg, the originators of this principle, being both gas engineers. Thus, we may exclaim with the poet, "What mighty ends from minor causes spring."

The Adelphi Theatre is about to be rebuilt on a larger scale; adjoining properties have been purchased for that purpose.

SIR ROBERT PEEL'S NEW GALLERY AT DRAYTON MANOR.

The new picture gallery, of which we gave a view some time ago,* is now finished. It is attached to the south-east angle of the mansion, and forms a wing 100 feet long in extension of the north front. The exterior is built of stone from Hollington. The style of architecture is that which prevailed during the latter part of Queen Elizabeth's reign, and that of James I. An arcade extends along all three sides, surmounted by an entablature, with an attic, upon which are small carved pinnacles breaking the outline of the building. The exterior is further decorated by four stone statues, somewhat larger than life; the two towards the south, or garden front, representing Rubens and Vandyke, and the two towards the north representing Reynolds and Lawrence. There are no windows, but a glazed sash door at the south-western extremity, which leads on to a new terrace, about 160 feet long and 19 feet wide, decorated with a stone balustrade, vases, pedestals, &c. This terrace joins on to other terraces surrounding three sides of the mansion, embellished with a profusion of marble and stone vases. Within, the ceiling is of various shades of oak and walnut-tree wood. The walls are painted of a strong *greenish* neutral colour; the skirtings are of wainscot. The floor is bordered with an inlaid band of a scroll pattern, consisting of oak, walnut-tree, and ebony woods. The columns and pilasters, seen in our engraving, are of marble. The capitals and bases are of white veined Italian marble; the shafts are each of a single block of Belgian marble, of variegated colours, chiefly of reddish hues, intermixed with white. The pedestals on which they stand are panelled, and composed of the same marbles.

QUESTION AS TO THE STRENGTH OF CAST-IRON.

Sir,—If any of your correspondents, whose experience qualifies them for the task, would favour your readers with their opinions upon the following questions, probably the information would be felt of value by others, as well as by your obedient servant,

Islington. G. M.

Suppose I wish to settle the scantlings of some iron castings, such as girders, pillars, &c.; and suppose that, with the intention of resting my case upon the best and soundest authority, I consult Tredgold's well-known Essay on Cast-iron, in which I find some beautiful theories of the action of forces upon materials, joined to what the author seems to have considered sufficiently sound data for the strength of the particular material, cast-iron. But, suppose my copy of the book is one of the fourth edition (edited by Mr. E. Hodgkinson, 1842), in which I find, in the editor's notes, some slur cast upon Tredgold's accuracy, principally as regards the varying strength of iron of different manufactures, of which many sorts are said to be very much below the author's assumed average:—

Now I wish to ascertain whether, if my girders, &c., are procured from manufacturers of established credit and respectability, in London or elsewhere, they may not be calculated to possess the degree of strength, at elastic limits, which is assumed in Tredgold's formulæ? If not, what may be expected to happen to the numerous buildings in which cast-iron supports have been used, but which have been erected previously to the recent researches of Mr. Hodgkinson and Mr. Fairbairn? I have not yet procured a detailed copy of these: when I do, shall I have to unlearn Tredgold's beautiful system of calculating pillars and struts, or shall I only be obliged to modify his constants, to suit another scale of strength?

Club Competition.—We understand that the members of the Army and Navy Club have purchased a large space of ground adjoining their old house of meeting in St. James's-square, with the view of erecting a building which shall take rank among the architectural ornaments of the metropolis. For this purpose, according to the *Athenæum*, it is their intention to offer two prizes, of 200*l.* and 100*l.* each, for the first and second best plans of such a building, and to open the competition to the members of the architectural profession at large.

* See Vol. III., p. 222.

CHINESE ARCHITECTURE.

Mr. Montgomery Martin, in his recent work on China, says—"The northern division of *Peking* consists of three inclosures, one within another, each surrounded by its own wall. The first inclosure ('forbidden city') is the most splendid and important part of Peking. It is situated nearly in the centre of the northern division of the city. It is an oblong parallelogram about two miles in circumference, and inclosed by a wall nearly 30 feet high. This wall is built of polished red brick, surrounded by a ditch lined with hewn stone, and covered with varnished tiles of a brilliant yellow, which give it the appearance, when seen under the rays of the sun, of being covered with a roof of gold. The interior of this inclosure is occupied by a suite of courtyards and apartments, which, it is said, for beauty and splendour, cannot be surpassed. It is divided into three parts—the eastern, middle, and western. The Gate of Peace has five avenues, and is a superb building of white marble. The height of the basement is 20 feet, and the whole edifice 110. The ascent to it is by five flights of forty steps each, and it is highly ornamented with tripods and other figures in bronze.

Suchaw, two days distant from the sea, accessible only by inland water communication, has a high reputation in every part of China for its splendid marble buildings, the elegance of its tombs, the number of its granite bridges, and artificial canals, gardens, streets, and quays. Indeed, there are several towns included in one, comprising what is called Suchaw. The city proper is inclosed with high walls, which are about ten miles in circumference: the suburbs are four distinct towns, about ten miles in length, and nearly the same in breadth.

PROTECTION OF BUILDINGS FROM LIGHTNING.

SOCIETY OF ARTS.

In a paper by Mr. Highton on the effects of heavy discharges of atmospheric electricity, as exemplified in the storms of 1846 (including an account of the destruction of St. George's Church at Leicester on the 1st of August), with remarks on the use and application of lightning conductors, read at the last meeting of the Society of Arts, the author proceeded to compare the power developed in the discharge of the lightning which destroyed this church, with some known mechanical force. He stated that 100 tons of stone were blown down a distance of 30 feet in three seconds; and, consequently, a 12,220 horse-power engine would have been required to resist the efforts of this single flash. He exhibited the effects of a new battery constructed by himself, and which was less than the $\frac{1}{40}$ of a cubic inch in size. This battery he had found would, for a month together, ring a telegraphic bell ten miles off. He also exhibited a second battery, which, although so small that it would pass through the eye of a needle, is of power sufficient to work a telegraph. Having detailed the course of several discharges of atmospheric electricity, he proceeded to shew the effects produced on the electric telegraphs, and the means which have since been adopted to prevent injury to them in future. He stated that, since the occurrence of the above storms, he had examined the Cathedral of St. Paul, in London, to ascertain how far this noble pile of building is protected from the effects of lightning. He found that the two small turrets have lightning conductors erected, but the central dome has none. The position of the spouts and other metallic connections is, however, such, that he considers, if the same are presevered as they now are, the building will for years to come be free from damage by lightning; but should they be removed at any time, and glass or porcelain employed in their stead, the main part of the building would be in constant danger from every storm that passes over the city. He concluded by urging the importance of a correct and systematic principle being acted on in the new Houses of Parliament, with a view to securing them from the disastrous effects of lightning.

A pier half a mile long is to be built at St. Helier's, Jersey, with other works, for all of which contracts have been advertised for.

New Books.

Turning and Mechanical Manipulation. Intended as a Work of Practical Instruction on the Lathe, and the Various Mechanical Pursuits followed by Amateurs. By Chas. Holtzapffel, Associate of Institution of Civil Engineers (64, Charing-cross). 1846.

This is the second volume of eight contemplated by Mr. Holtzapffel, and is entitled to the strongest recommendation we can give it, as a sound and sterling work,—the result of personal experience, careful calculation, and great ingenuity. The first volume treated of materials, their differences and preparation, and the various modes of working them, generally without cutting tools. The volume before us treats of the principles of construction, action, and application; of cutting tools used by hand, and also of the machines derived from the hand tools, and embraces chisels and planes, turning tools, boring tools, screw-cutting tools, saws, files, shears,—and has a number of valuable notes in the shape of an appendix. The author says:—"The chisel was selected as the subject of the first chapter, as, from the simplicity of its form and action, it may be viewed as a keen wedge—sometimes employed with quiet pressure, at other times used with percussion, as in tools of the character of axes and adzes; and the straight chisel, mounted in a stock for its guidance, becomes a plane. Further, the chisel may be used as a turning tool; and many tools of this kind (the second in classification) follow the conditions of chisels and planes, if we imagine the tool to be held at rest, and the work to revolve against it on a fixed axis; the practice of turning is naturally associated with that of boring holes, although, in most cases, the boring tool revolves, whilst the work remains at rest. Turning and boring, each circulatory processes, led to the selection of the screw as the subject of the next chapter—for revolution, combined with rectilinear advance, are exhibited in all the numerous modes of producing screws. Saws were ideally compared with some of the scraping chisels, but with a multiplication of points, and these sometimes arranged in continuous order, as in the circular saw. The file, from its vast assemblage of scraping teeth, was likened to a multiplication of the saw. Shears and punches are next considered, in great measure, as parallel chisels, and the rectilinear edges of shears, although mostly duplicated, bear some resemblance to simple chisels—although, from their duplication, they act on both sides of the material; and, lastly, the ordinary punch is comparable with the rectilinear edges of the shears and chisels, if we do but consider these to be bent into the circular form."

All are treated in the clearest and most philosophical manner.

As a specimen of the style in which the work is written, we quote the following remarks on

METAL TURNING.

"The softest of the metals, such as lead, tin, and soft pewter, may be turned with the ordinary tools for soft wood; but for the harder metals, such as zinc, and hard alloys containing much antimony, the tools resemble those used for the hard woods, and they are mostly employed dry.

Copper, which is much harder and tougher, is turned with tools similar to those for wrought-iron, but in general they are sharpened a little more keenly, and water is allowed to drop upon the work, to lessen the risk of *dragging* or tearing up the face of the copper, a metal that neither admits of being turned or filed with the ordinary facility of most others. Silver and gold, having the tenacious character of copper, require similar turning tools, and they are generally lubricated with milk.

In the above, and nearly all the metals except iron and those of equal or superior hardness, there seems a disposition to adhere, when, by accident, the recently removed shaving gets forcibly pressed against a recently exposed surface (the metals at the time being chemically clean). This disposition to unite is nearly prevented when water or other fluid is used.

Water is occasionally resorted to in turning wrought-iron and steel; this causes the work to be left somewhat smoother, but it is not generally used, as it is apt to rust the machinery; oil fulfils the same end, but is too expensive for general purposes.

Cast-iron having a crystalline structure, the shavings soon break, without causing so much friction as the hard ductile metals; cast-iron is therefore always worked dry, even when the acute edges of 60 degrees are thickened to those of 80 or 90, either from necessity, as in some of the small boring tools, or from choice on the score of durability, as in the largest boring tools and others. Brass and gun-metal are also worked dry, although the turning tools are nearly rectangular, as the copper becomes so far modified by the zinc or tin, that the alloys, although much less crystalline than cast-iron, and less ductile than copper, yield to the turning tools very cleanly without water."

The volume is beautifully printed; is illustrated by more than 700 wood cuts; and must become a text book.

Algebra Made Easy.—By T. Tate, Mathematical Master of the Training College, Battersea. Longman and Co.

"Algebra, which is peculiarly called the analytic art," says Mr. Tate, "exercises, in a way which no other subject can, those powers of analysis and abstraction, which would otherwise lie dormant and enfeebled. The philosopher, embracing within the comprehensive grasp of his intellect the known laws of the universe, was once a feeble-minded child; and in order that such a child may become a philosopher, its powers of analysis and induction should be cultivated, in a manner corresponding to its capabilities, at an early period of its intellectual development. While moral training, of a specific kind, should not be lost sight of, at the same time it is important to bear in mind, that the patient and reflective spirit which analysis engenders, gives a healthful tone to the character, and renders us more capable of appreciating and enjoying whatever is morally sublime or beautiful in nature or revelation."

We have not seen a book better calculated to lead to the study of this most important branch of education than Mr. Tate's unpretending volume. It is clear and simple, and, withal, small and inexpensive. We advise all who would gain some knowledge of the principles of algebra to purchase it forthwith.

Correspondence.

WANTED: A THOROUGHFARE.

Sir,—As the whole of the articles in your excellent publication tend to convenience, comfort, and health, will you allow me to call your attention to the want of a thoroughfare from the Strand to Holborn, say by continuing Pickett-place, talked of some twenty or thirty years since, to Serle-street, by Lincoln's-inn Hall to Great Turnstile. What a place for a great thoroughfare!

Having to go from Essex-street to Red-lion-square several times in the course of the day, the loss of time is most serious. It is really disgraceful to suffer the few dilapidated houses at the top of Pickett-place to block up what, but for them, would be a good thoroughfare. I know of no improvement that could be made at so small a cost. The press is the moral goad, which you, Mr. Editor, apply sometimes with right good will.—I am, &c.,

A SUBSCRIBER FROM THE COMMENCEMENT.
Strand.

COMMITTEE OF WORKS FOR LONDON.

Sir,—Your valuable little work is doing much good, and I am emboldened on that account to say a few words to you now, on one subject which has engaged much of my attention when perambulating this great metropolis,—it is to express my regret that there is not any Board (and I do not except the one lately formed for Metropolitan Improvements), taking a comprehensive view and checking an outlay of money on public buildings for *particular* purposes, and without any regard to the general effect.

I shall only allude at present to the expense incurred, a year or two ago, on the external front of the Admiralty, next to St. James's Park; had that building been *stuccoed*, and also one or two houses west of the Horse-guards (on the park side), what a good effect it would have had when viewed from the esplanade on which the Guards occasionally form. They *pointed* the brickwork, and coloured it, in such a way as to make as great a contrast as possible with the stonework of the Horse Guards. That esplanade would also be much improved by being extended to the margin of the water in the park. Do look at the fronts mentioned, from the park gate, when you are passing that way.

By M. Angelo Taylor's Act, all the *urinals* have been taken away, not only from the public thoroughfares, but even in the private corners of *back* streets, and no public ones are erected in other places. In consequence, poor men coming from the country, and without money to enter a public house, must walk miles before they can get relieved; it has aggravated disease previously existing, and been the origin of many complaints. It has shewn a want of feeling for the poor man, and cannot be too much reprobated and exposed; this duty may not be altogether within your province, but I think it is that of every considerate man, and I have therefore stated it to you in addition to the suggestion about the esplanade.

An Old Architect.

Dec. 28, 1846.

*** We need not tell our old readers, that we have long ago pointed out the want of these last-mentioned conveniences.

Miscellanea.

Character of Classic Art.—The most prominent character of classic art — nay of classic life and literature, is their perfect and thorough *seriousness*. For one Aristophanes or Plautus, we find a host of authors, only intent on elevating and instructing the people, point blank, without any circumflexes or inuendos whatever; authors—dreamy, rambling, soaring in quite other spheres than those of ephemeral and absurd amusement. The same it was with their art. They pictured and sculptured Silenus and satyrs and the like—but how rarely; and not knowing the modes of modern multiplication of art-products, whatever they did, they knew they did—for *eternity;* a very serious and ticklish admonitor indeed. An artist—a man, who *knows* that he stands before futurity, even only hopes so, will act quite differently from the penny or pound *catcher*. But it requires some brass to think so, to act so, at least. The *will*, however, is the first condition of the deed. The artist—the man who has staked his whole life on one idea, keeps this idea enshrined in a framework of adoration, love, reverence. And what would, we say, even any beauteous, intelligent woman think of a lover, who would speak of her or to her in a stream of jests, puns, and the like buffoonery? What we reverence, we joke not on—what we want the people to reverence, we will not let others make a laughing-stock of. Goethe was right (but not *understood*) when he said, "Times are worse than we imagine." Frantics often antecede idiocy and derangement; therefore, it may be, why some believe the age incurable.—[*Isis of Oken.*]

New Planing Machine.—Mr. Job Shelden, of New Haven County, has invented a machine for planing boards, in which is combined more originality of mechanical movement, with judicious proportion and application, than has been combined in any new invention within the past year. In this machine, the inventor has boldly struck out on entirely new principles of operation, and there appears nothing about the machine which bears any resemblance to those in use. It carries a series of planing cutters, which work with a reciprocating motion, cutting transversely, but with oblique edges, in each opposite direction.—*Patent Journal.*

Science in Art.—A machine has been invented by Mr. Kingston, called the Carsoetype. Its purpose is to give certainty in drawing the lines of the human face. By means of this, the exact size of the several features and of the head is obtained. The portrait, in its shadowings, is afterwards completed by art on a ground of marble.

Silcock's Patent Planes.—Mr. Silcock has given much attention to the manufacture of planes, and has produced a very superior tool. He has invented three patent metallic planes to do the work of forty-nine planes made on the old plan, which seem worthy of examination.

Llandaff Cathedral Restorations.—The dean has issued a statement of the expenditure of the funds put into the hands of the chapter for the restoration of the cathedral, from which it appears, that though the work is progressing somewhat slowly, like the original construction, the eastern chapel has been completely restored at an expense of 165*l.* 12*s.*; the eastern extremity of the south aisle, with its windows and open-work parapets, is in progress, and is estimated at the cost of under 300*l.* The next proposed alteration is the restoration of the choir. The present winter is dedicated to this in-door work, and the funds in their present state are considered inadequate to the completion of the lower story so high as the *Italian* cornice. The balance remaining in the banker's hands is stated at 225*l.*, and of the sums subscribed, 1,000*l.* still remain to be called in. Since this was printed, works have been actively commenced in the choir at its eastern end. A Norman arch of Bishop Urban's work has been opened out, commanding a perspective into the eastern chapel. The mouldings of this arch are in good preservation. Beneath this, a screen, of Bishop Marshall's work, A.D. 1480, has since been exposed. A sepulchral recess, in which the capitals of the side-shafts are executed in the style of 1200, is likewise now again disclosed to view in the south-east wall of the choir. Tradition assigns this as the tomb of St. Teilo, or rather of one of his three miraculously multiplied corpses. The Archbishop of Canterbury, Bishop of Bangor, and Bishop of St. Asaph have each subscribed 50*l.* towards the work.

Important to Iron Merchants.—In the High Court of Justiciary, Edinburgh, a case, in which Messrs. Vincent, Higgins, and Sons, iron merchants in Liverpool, were pursuers, and Messrs. Dunlop, Wilson, and Co., iron merchants in Glasgow, were defenders, came before the Lord Justice-General and a jury. The question in dispute arose out of an offer made by the defenders to the pursuers of 2,000 tons of pig-iron, at 65*s.* per ton; but, as the pursuers did not answer the letter containing the offer by return of post, the defenders held they were freed from it. The issue was couched as follows:—Whether, about the end of January, 1845, the pursuers purchased from the defenders 2,000 tons of pig-iron at the price of 65*s.* per ton? and whether the defenders wrongfully failed to deliver the same, to the loss, damage, and injury of the pursuers? Damages laid at 6,000*l.* The pursuers produced six witnesses to prove that, according to the practice in mercantile matters, they were not bound to answer in course of post, while the defenders brought forward an equal number to prove that the contrary was the practice, to render the transaction obligatory. The jury, after a short deliberation, returned a verdict for the pursuers—damages, 1,500*l.*

Lead Ores at Cape of Good Hope.—In the division of Albany, on the eastern coast of the Cape, near Algoa Bay, is found in the original formation a rather extensive bed of lead ore, which has only lately been mined. An experienced mineralogist, who had heard in England of these ores, purchased lands in the vicinity of Van Staden's River, and commenced to work them with practical men, after satisfying himself as to the productiveness of these ores. On an analysis lately by a competent person, 3,269 grains of ore produced 4·070 grains of sulphate of lead, 0·015 grains of sulphuret of antimony, 0·126 grains oxide of zinc (with traces of iron), and 0·383 grains sulphate of barium. If, from this the quantity of lead, antimony, zinc, and sulphur be calculated, it shews that—

3,269 grains of lead ore contain, in 100 parts,		
Lead	2,781 ..	85·07
Antimony	0,011 ..	00·34
Zinc, with traces of iron	0,021 ..	00·64
Sulphur	0,447 ..	13·67
	3,260	99·72

Buckingham Palace.—Sir,—It must have occurred to you, as it has to others, that the wings of Buckingham-palace are too *narrow*. Now, I would suggest (if not too late), that by making them double on each side, with an *open* colonnade between each wing and the addition, a handsome building would be the result, and would offer all the accommodation required.

C. F. A.

PROJECTED WORKS.—Advertisements have appeared in the current newspapers for contract-tenders for the various works to be done in the erection of the new town hall at Doncaster; in the erection of two villas near Southampton; and in the construction of a stone pier half a mile long, and other works of a new harbour, at St. Helier's, Jersey; also for the whole of the works on 10¼ miles of the Wakefield and Goole, 11 miles of the North British, 19 miles of the Malton and Driffield, 16 miles of the Belfast and county Down, and 10 miles of the Stirling and Dunfermline, lines of railway; and for earthwork and masonry of two contracts on the North Western; larch sleepers for same line; and hackmatack, pine, or hemlock sleepers to be shipped abroad; also for repair of roads in Staffordshire: for lighting Writtesley with gas; and for 60 cast iron lamp-posts, and as many lanterns, for Wavertree, Liverpool.

RUTTER'S LIGHT.—The *Art-Union Journal*, of the present month, in describing Mr. Rutter's "Ventilating Light" says, "through the body of this, the whole of the heated air, vapour, and other products of combustion ascend to the ceiling, and are thence conveyed by a suitable pipe, laid between the ceiling and floor, to a chimney *or the open air*, as may be most convenient." Now, some months ago we caused one of these lights to be fitted up by the patentee's manufacturer, in a position where the pipe could not be taken into a flue, but came into the air under a verandah; and notwithstanding the end of the pipe was protected by a cowl, and that other expedients were resorted to, to prevent down draft, the result was a failure. We think it right therefore to caution our readers against committing a similar mistake.

CELLARS UNDER NEW BUILDINGS ACT.—At Bow-street, the first case of the sort under 7 & 8 Vict., cap. 84, sec. 53, occurred in course of last week, when a lodging-house keeper was brought before the court on a summons charging him with unlawfully suffering a certain cellar in his house, the same being a dwelling-house, to be occupied as a dwelling, to which he pleaded guilty, but that he received no rent. The case was discharged on payment of costs, as the authorities had interfered in his favour. The apartment in question was a stone cellar without any window to admit light or air. Another cellar of a like order was also discovered with a family dwelling in it. The inhabitants were removed to the workhouse. It ought to be generally known that in such cases householders render themselves liable to a penalty of 20s. a day, which the authorities are determined to enforce.

DWELLINGS FOR THE LABOURING CLASSES IN AUSTRIA.—[*Audiatur et altera pars*]. A society having been formed at *Prague* for the providing the above with cheap and salubrious dwellings, the police have kept the petition for the formation of the society eighteen months, without replying to it. Still, the necessity for such houses increases every day, as the Embellishing Commission (*Verschönerungs Comission*) is only intent on pulling down indifferent parts of the city, and replacing them by fine or elegant, and consequently expensive buildings; so much so, that while the spaces and accommodation for the higher and middle classes are constantly increasing, the labouring population is completely out-elbowed of their very existence and habitations.

LIBERAL ACT OF A MANUFACTURER OF IRON IN FRANCE.—The condition of the working classes is attracting the attention of masters in France—amongst whom the plan of Mr. Talabat, *maitre des forges* at Sant-du-Labat (Tarn), is worthy of remark. Mr. T. has resolved on *idealizing* the hitherto truck system of masters, and to furnish his workmen with meat, bread, wine, and all other necessaries, at *cost prices*. By so doing, Mr. Talabat loses every year 4,000 francs (160*l.*), but says, in his *compte-rendu*, that this loss has been *largely balanced* "by the material and *moral* amelioration of his workmen."

PUBLIC OVENS.—It is said that a company is about to be formed for the erection of public ovens on the same principle as the baths and washhouses. The labouring poor will then be enabled to make their own bread, of whatever quality their means will permit; as pans and other requisites will be provided, and the baking performed at a very trifling expense.

MEETINGS OF SCIENTIFIC BODIES

During the ensuing Week.

MONDAY, Jan. 11th.—Royal Institute of British Architects, 16, Grosvenor-square, 8 P.M.

TUESDAY, 12th.—Institution of Civil Engineers, 25, Great George-street, 8 P.M.; Syro-Egyptian Society, 71, Mortimer-street, Cavendish-square, 7½ P.M.; Freemasons of the Church, 3, Great Newport-street, 8 P.M.

WEDNESDAY, 13th.—Society of Arts, Adelphi, 8 P.M.; Graphic Society, Thatched House Tavern, 8 P.M.

THURSDAY, 14th.—Royal Society, Somerset House, 8½ P.M.; Society of Antiquaries, Somerset House, 8 P.M.

TO CORRESPONDENTS.

"*G. H.*"—We will not fail to return free the drawings if sent.

"*J. H.*"—A license is necessary for valuing artificers' work. A builder does not need one for his own bills.

"*W. H. H.*"—The early volumes, we are sorry to say, are out of print. Immediate application would be necessary for that of last year.

"*Cane-Work.*"—A correspondent wishes to know how best to clean the cane-work of old furniture. He says, "I have tried strong solutions of vitriol and water, and the antipodes—soda and water, but without avail, the said cane-work pertinaciously persisting in its nasty, dirty, yellow aspect."

Received.—"T. G.," "Observer," "S. S. W.," "G. T.," (Bath) "J. B.," "M. I." (Brixton), "J. K."

Books Received.—"Memoirs of Benvenuto Cellini," translated by Thomas Roscoe. (H. G. Bohn, York-street.) "The High Pressure Steam Engine Investigated:" by Dr. E. Alban, translated by W. Pole, F.R.A. (Weale, Holborn. Parts I. & II.) "The Man in the Moon." No. 1, edited by Albert Smith and Angus Reach. (All thanks to those who make us laugh without bad feelings.) People's edition of Part I. of Hadyn's "Messiah" and "Creation."

"*Books and Addresses.*"—We have not time to point out books or find addresses.

*** Correspondents are requested to address all Communications to the EDITOR, 2, York-street, Covent-garden.

TO PROVINCIAL READERS.—In reply to complaints of the irregular delivery of THE BUILDER in provincial towns, we beg leave to state that it is invariably published by seven o'clock on Friday morning; and that the irregularity complained of rests entirely with the parties through whom it is obtained.

ADVERTISEMENTS.

FILTERED WATER.—As the rainy season produces its dirty water, JOHN DAY, proprietor of Defonville's system of filtration, the only one known by which large quantities of liquids are easily filtered, begs to announce that he continues to supply these apparatus, which are easily applied to cisterns and water-butts, and when fixed require no care or attention from servants, and never get out of order. The prices are from Two to Four Guineas, producing from 100 to 300 gallons daily; for brewers, distillers, paper makers, hospitals, and large establishments, to an unlimited quantity, the prices varying accordingly.
40, Love-lane Platform, Rotherhithe; Office, 33, Conduit-street, Bond-street.

H. MORRELL'S FINE PREPARED DRAWING PENCILS.—Under the patronage of her Majesty's Stationery Office, the Honourable Board of Ordnance, and the Honourable East-India Company.
The attention of Artists and the Public generally is respectfully solicited to these BLACK LEAD PENCILS, which are prepared perfectly free from grit, of great variety of shade, and possess all the requisites for the most highly-finished drawings.
Sold wholesale at the Manufactory, No. 149, Fleet-street, London, and may be had retail, of all the principal Booksellers and Stationers in Town and Country.

TO ENGINEERS AND BOILER MAKERS.
LAP-WELDED IRON TUBES FOR STEAM BOILERS.
THE BIRMINGHAM PATENT IRON TUBE COMPANY, 42, Cambridge-street, Birmingham, and Smethwick, Staffordshire, manufacture Tubes under an exclusive License from Mr. Richard Prosser, the Patentee. These Tubes are now very extensively used in the Boilers of Marine and Locomotive Steam Engines in England and on the Continent, are stronger, lighter, cheaper, and more durable than Brass or Copper Tubes, and warranted not to open in the Weld. They may be fixed in the Boilers without Ferules, and can be taken out and refixed without additional trouble or expense.—Address, 42, Cambridge-street, Crescent, Birmingham; London Warehouse, 68, Upper Thames-street.

DECORATIONS in WOOD.—The unrivalled perfection at length attained by the patent process of carving, enables its proprietors to offer to the public, at an extremely reduced price, every possible variety of carved wood for external and internal enrichment, thus substituting the genuine material for those numerous imitations which have invariably been found fragile or unsatisfactory. Mouldings and carvings of all kinds are thus supplied, adapted for church or library fittings, altar chairs, picture frames, chimney-pieces, and every description of Gothic or Elizabethan furniture. Specimens may be seen and drawings obtained at the Patent Wood Carving Offices, 444, West Strand; or at the Works, Ranelagh-road, Thames-bank.

ARCHITECTURAL ENRICHMENTS. BIELEFELD'S IMPROVED PAPIER MACHE, which has been almost universally adopted for architectural decorations, has been patronised by her Majesty, by the Hon. Commissioners of the Board of Works, by the highest of the Nobility and Gentry, and by the most eminent architects of the day. It has been used at the royal palaces, at the present House of Lords, at Dublin Castle, at Drayton Manor, the new Conservative Club-house, at Grocers' Hall, &c., also at the British Museum, and Pantheon Bazaar, where it has been extensively used for some years, and an inspection will sufficiently establish its superiority over every other kind of composition, both for beauty and durability. Designs prepared for the decoration of ceilings, panelling of walls, &c. A volume of enrichments, containing more than 1,000 designs of the papier mache ornaments, with a tariff, price £1.—Works, 15, Wellington-street, North, Strand.

PAVING, 2s. 9d. PER SQUARE YARD.
Basements, Foot-walks, Malt-houses, Corn Stores, Floors of Warehouses, and every description of Pavement laid down at the above low price, and the work guaranteed.—Apply to JOHN PILKINGTON, POLONCEAU'S BITUMEN PAVEMENT OFFICE, 15, WHARF-ROAD, CITY-ROAD.—N.B. Country Agents and Railway Engineers and Contractors supplied with the best bitumen for covering bridges and arches.

TO ENGINEERS AND ARCHITECTS,
And as an Elegant Present to a Lady, as well as a most Convenient Pocket Appendage.
TO all those who find a Difficulty in the Use of STEEL PENS, and who wish to avoid the loss of time occasioned by the frequent mending of Quills, STEPHENS'S PERPETUAL PEN, made of Gold, with Points which never wear or alter, offers a most convenient substitute, as Ink, which oxydises and lingers in the steel pen, flows from this with precisely the same facility as from a Quill, and the Pen never requires mending. Price 15s. It may be used with a common holder. With an ever-pointed Silver Pencil Case, with Leads, 27s.
Sold by the proprietor, HENRY STEPHENS, 84, Stamford-street, Blackfriars-road, London. On application, by letter, this Pen will be sent, per post, to any part of the kingdom.

CAEN SUFFERANCE WHARF, ROTHERHITHE.
LUARD and BEEDHAM beg to inform Architects, Surveyors, Builders, and others, that they have removed from Norway Wharf, Greenwich, the whole of their Caen Stone business, to the above extensive premises, where a large Stock will be kept up by continual fresh arrivals from their quarries at Allemange. Orders received at the wharf, and further particulars may be obtained of Mr. GEORGE GATES, 18, Southwark-square, Borough, London.
Orders shipped direct from Caen to any port.
The Waterman Steamboats call at Lavender-pier, adjoining Caen Wharf.

PIMLICO MARBLE AND STONE WORKS, BELGRAVE WHARF, PIMLICO-ROAD.
SAMUEL CUNDY begs to inform Architects and others, that GOTHIC WINDOWS, and every other branch of Stone-work, &c., are executed at the cheapest possible rate, and packed for the country ready for fixing or fixed, enabling ARCHITECTS to have the most difficult TRACERY for CHURCHES, or other buildings in the PROVINCES, executed under their immediate inspection in TOWN.
BUILDERS and MASONS can have every description of Stone in the London Market, either in the rough block, or cut to sizes from the saw, or prepared ready for fixing or fixed, avoiding either waste in the goods or carriage.
Box Chimney-pieces from 12s. upwards.
THE WORCESTER ENCAUSTIC TILES, in all their beautiful variety, may be inspected, in addition to the usual extensive stock of Chimney-pieces and FONTS.
Estimates given for building generally.

PORTLAND CEMENT does not vegetate in damp situations, requires no colouring, is perfectly hydraulic, and resists the action of frost. The price is now considerably reduced, and the public are thereby enabled to avail themselves of these distinct advantages.
Manufactured by J. B. WHITE and SONS, of Millbank-street, Westminster; and sold at their warehouses—Earl-street, Blackfriars; Druce's Wharf, Chelsea; Bell's Wharf, Paddington; and Albion Wharf, Deptford-bridge; at Seel-street, Liverpool; and Salmon and Co.'s Dublin.

KEENE'S PATENT MARBLE CEMENT forms an exceedingly hard and indestructible Stucco, which may either be prepared for paint, or finished in imitation of stone, by the addition of Portland or other stone dust.
It is a cheap and efficient substitute in place of wood for skirting, architrave, and other mouldings, in its application for which purposes it checks the progress of Fire and the attacks of Vermin.
Patentees and sole Manufacturers, J. B. WHITE and SONS, Millbank-street, Westminster, and Seel-street, Liverpool.

MARTIN'S FIRE-PROOF AND ORNAMENTAL CEMENT.
CAUTION.—Messrs. STEVENS and SON, Patentees, beg to caution their friends and the trade generally against confounding this invaluable Cement with others, erroneously said to be of the same description. S. and S. pledge themselves that MARTIN'S CEMENT is totally dissimilar in composition and manufacture from every other, and being a neutral compound, is not only free from chemical agency upon any substance with which it may come in contact, but completely resists the action of the strongest acids. They feel it a duty to direct attention to the following properties, which it exclusively possesses:—
1. It rapidly acquires the hardness of stone.
2. Unlike other internal cements, its hardness is uniform throughout its entire thickness.
3. Its surface (which may be made equal to that of the finest marble) NEVER THROWS OUT ANY SALT, and will receive paint in four days, without peeling, when put upon dry work.
It is peculiarly adapted as an internal stucco for walls, skirtings, architraves, mouldings, and enrichments of all kinds, to all of which purposes it has been extensively applied by Mr. Thomas Cubitt, on the Grosvenor estate, &c.
For the above purposes, it possesses great advantages over wood, being more economical and durable, resisting fire, damp, and vermin.
For the floors of halls and fire-proof warehouses, its lightness, durability, and uniform surface give it an immense advantage over stone, being, at the same time, much more economical. The most satisfactory references can be given. To be had of the Patentees, Plaster of Paris and Cement Manufacturers, 186, DRURY LANE.
Agent for Liverpool and Manchester, Mr. R. PART, 28, Canning-place, Liverpool.

TO ARCHITECTS, ENGINEERS, CONTRACTORS, BUILDERS, MASONS, AND PLASTERERS, MERCHANTS, SHIPPERS, AND THE PUBLIC IN GENERAL.
JOHN'S and CO.'S PATENT STUCCO CEMENT.—The following are the positive advantages possessed by this Invention over every Cement hitherto introduced:—It will effectually resist Damp. It will never vegetate, nor turn green, nor otherwise discolour. It will never crack, blister, nor peel off. It will form a complete Stone casing to any Building covered with it. It so closely resembles Stone that it is impossible to detect it. It never requires either to be painted or coloured. It will keep fresh and good in the cask, in any Climate, for any number of years. It is the only Cement that can be depended upon for export. It is the only Cement that can be used with confidence by the Sea-side. It may be used in the hottest or coldest Climates at any season. It will adhere to any substance, even to Wood, Iron, or Glass. It will carry a larger Proportion of Sand than any other Cement. It matures by age, and becomes perfect when other Cements begin to perish. It may be worked through the Winter, as frost has no effect upon it. It may be used on the Inner Walls of new Houses, which may be papered over or painted directly. Roofs laid or pointed with this Cement will remain undamaged by the severest Storms. Any Plasterer may apply it, the Instructions for use being very clear and distinct. The first cost of this material does not exceed that of the cheapest Cement now in use; but with all the above-named extraordinary and valuable advantages, nothing can approach it in point of economy.
Architects and Builders who have used this Cement have declared that it requires only to be known to be universally preferred.
Specimens may be seen, and a Prospectus fully describing the Cement, and its mode of application, together with a volume of Testimonials from every part of the Kingdom, may be obtained on application at the office of "The Builder," and of MANN and CO., SOLE AGENTS for the Patentees, 5, Maiden-lane, Queen-street, Cheapside, London; of whom also may be had
JOHN'S and CO.'S PATENT STONE-COLOUR STUCCO PAINT, expressly intended for Painting over exterior Walls of Houses that have been covered with Roman or other Cements, and which have become dirty and discoloured. It is in every way better suited for this purpose than White Lead Paint, which will frequently come off in flakes, being in direct chemical opposition with Cement; whereas MESSRS. JOHN'S and CO.'S PATENT PAINT having an affinity for Stucco, binds itself with it, stopping the suction, thereby rendering the wall proof against weather, and in the finish producing a pure stone-like effect, producible by no other Paint whatever. It is cheap in its application,—and may be used by any Painter, in any climate, even in the most exposed Marine situations.